MODERN PACKAGING

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NOVEMBER NINETEEN FORTY

"We have often had headaches and troubles with new products, but this time we called in American Can from the start. Problems like this are old stuff to them and the kind of service they give sure takes a load off our shoulders. As a matter of fact, we had four* of their departments working on this job. From now on, I'm for calling them in whenever we start discussing a new package."

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MODERN PACKAGING

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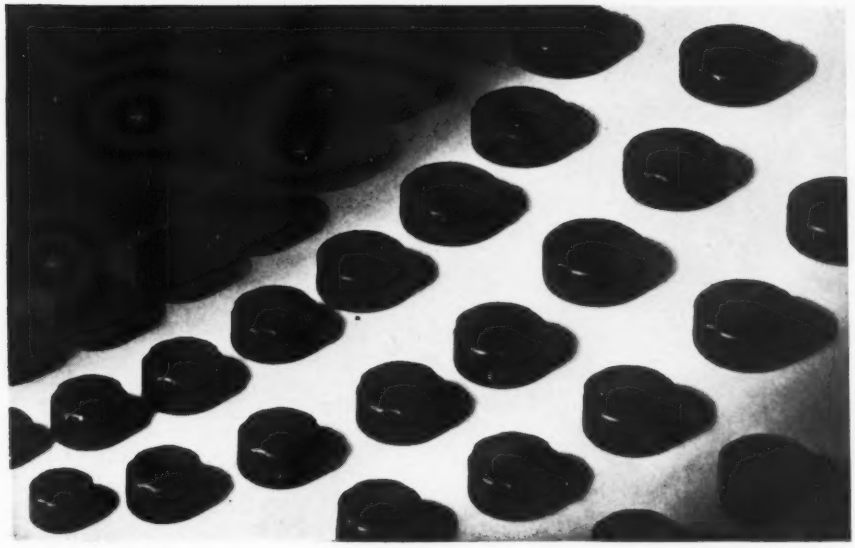

THE BUTCHER, the baker, and especially the glass packer, have found that many time-hallowed quotations don't apply any more. Particularly the one about all the world beating a path to the door of the maker of a better product—even though he be located in the deepest woods. Hard by the world's door-step is an abundance of high quality glass packaged goods. All one need do is travel a well-beaten path to the local food shop, drug store or department store—a matter of a few blocks at most. Thus the packer of a better product can't retire to the woods and wait for orders to come over the trees. He must go into the highways, the buyways and doorways, and tell the world about his product. He must use the printed word and the spoken word. That isn't all. Every means which may be of aid must be pressed into the selling ranks. And one of the greatest of these aids is the package. A package should sing. It should fairly breathe good design, careful consideration and judicious selection in every element. Such a package is a magnet for the eye. Better still, it gives silent yet eloquent suggestion of the extreme care lavished on the product. Sealing many fine glass packages is the Phoenix S T Cap—the *first* of the double-shell closures. Nine years ago this cap made its debut in the glass packaging world. It combined new attractiveness with an old familiar principle of sealing—the standard, continuous screw thread. It had all the flexibility, durability and dependability of the metal screw cap. It could be furnished with smooth, straight sides or its skirt could be grooved for easier application and removal. It could be decorated in all the sparkling, colorful finishes to which the metal cap lends itself. The Phoenix S T Cap still possesses these same advantages—in an increased degree—the normal improvements of nine years having added to its store. Thus it is still among the most popular metal caps. Of itself, the Phoenix S T Cap will cause no consumers to beat a path to the packer's door. Such an accomplishment is beyond any closure. But as a small yet important detail of a package it will do its part to help a product beat a path to many doorways—not once but over and over again.

PHOENIX METAL CAP CO.

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Modern Packaging

CHARLES A. BRESKIN, *Publisher*

ALBERT Q. MAISEL, *Editor*

NOVEMBER 1940

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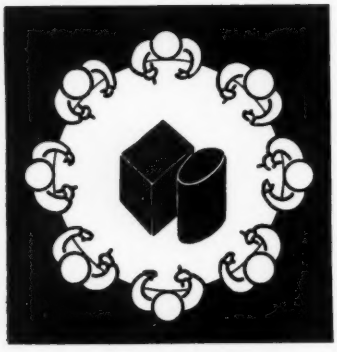

DECEMBER

Designers usually make news only through their designs. In the December issue of Modern Packaging, they will make news in person in the form of a Round Table debate in which a dozen of the most prominent designers and a group of packagers employing designers will discuss the subject of designer-client relationships. If you have ever been a designer, hired a designer or wondered about how a designer works, this debate should give you your answers. Modern Packaging's editor is scheduled to serve as moderator and so, if no one kills the umpire, look forward to the designers' Round Table in the December issue.

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★★ PACKAGING...and THE AMERICAN WAY ★★

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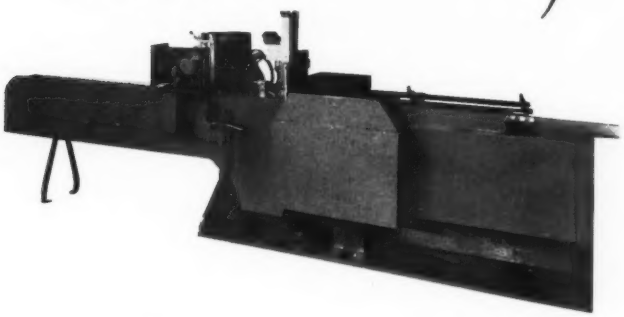

There is a *new, sharper* meaning to the phrase, "*The American Way of Life*" after a visit to foreign countries in the "*Cracker Barrel*" stage. You notice how the drugs and pharmaceuticals in our own bright, clean stores are *protected* from dust and dirt by cartons and other containers—packages that are a credit, both to the Drug and to the Packaging Industry.

Among these modern packages are *Anacin and Freezone.* The 50-tablet bottle of Anacin is cartoned on a swift, streamlined Redington machine . . . this same machine can be quickly adjusted for cartoning either the 10¢ bottle of Freezone or its "big brother" 35¢ size. In all three packages, *a circular* is folded and wrapped over the top of the bottle.

Anacin and Freezone will benefit in the next few years from *the economies of automatic cartoning,* especially because they are using a Redington cartoning machine of rugged construction and sound design. Its one-piece cast iron base—turned and ground shafts mounted in self-aligning roller bearings—geared drives for conveyors—Twin Disc Clutch—vari-speed motor pulley are just some of *the hidden improvements* that assure constant efficiency and low operating cost.

Products packaged on *Redington machines* range from cigarettes to codfish, candy to castor oil. Check with our ingenious "*problem-solvers*" on that current packaging situation . . . you're not obligated.

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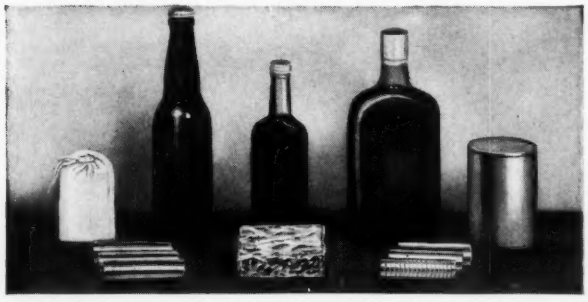
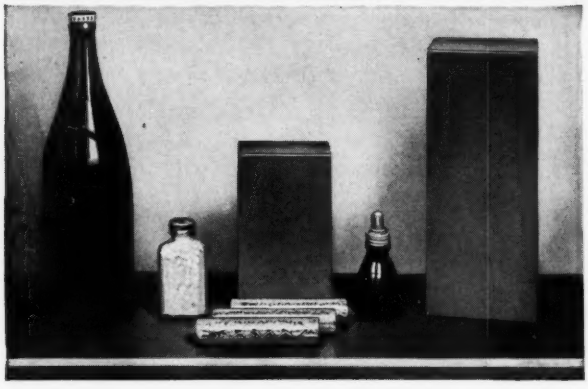
for CARTONING • WRAPPING • SPECIAL PACKAGING

PRODUCTS AND LABELS





make the values

Your repeat sales are built into your product, right in your factory. Your label identifies and guarantees your output. What happens *after your product leaves the factory?* Adhesives are low-cost insurance against loss of identity — or messy identification which builds the wrong impression. They represent less than 3% of your costs. You can afford the best!

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You'll find sound values in the pastes, glues and mucilages made by a firm with 55 years' experience in supplying the adhesives requirements of a hundred industries. Write us for the name of the nearest Arabol distributor.

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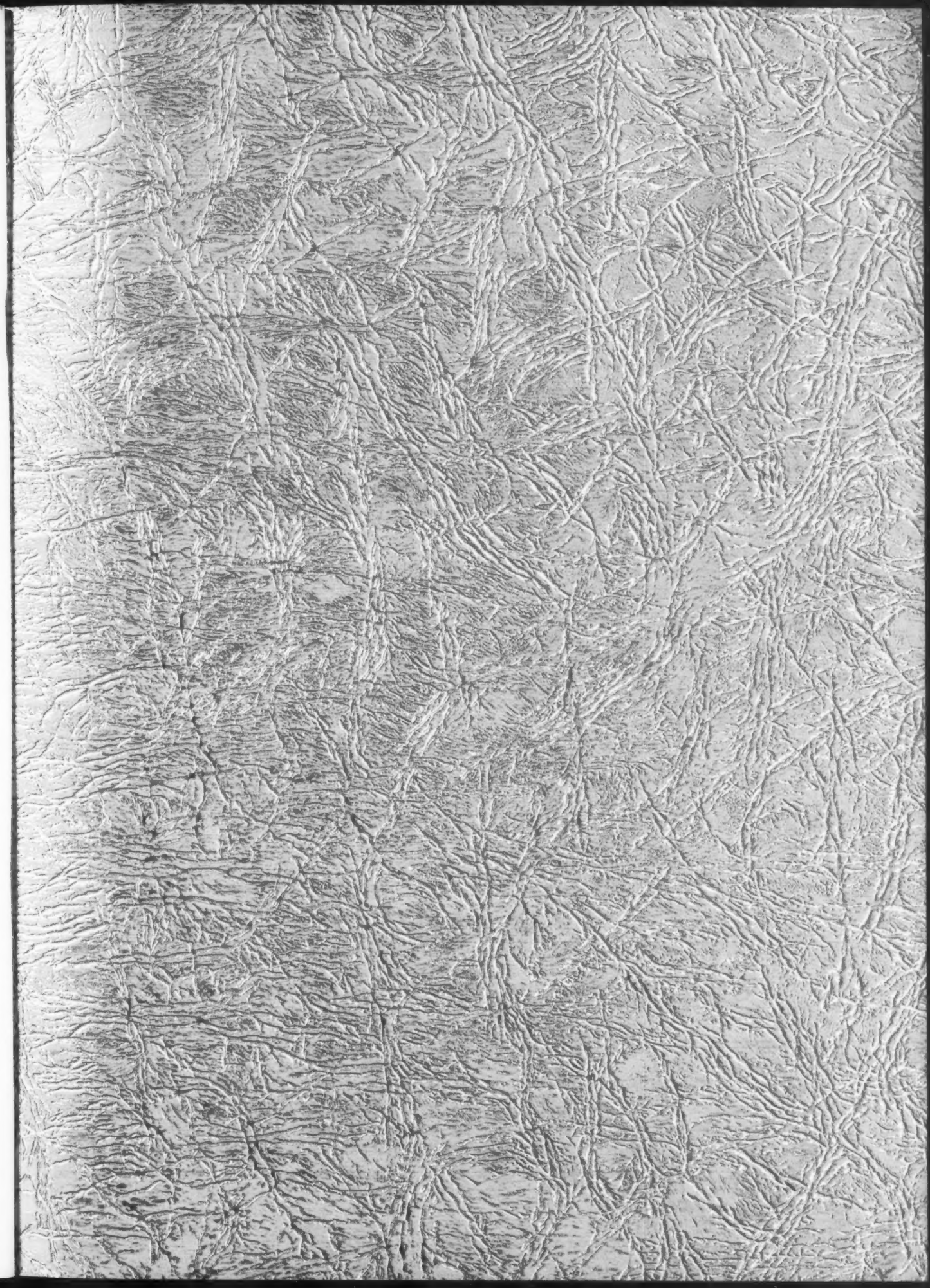

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164-B

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3. **For Your Best Bourbon**—or Scotch, or Rye, or Irish. High-lighted behind a bar or on a liquor counter in this unusual container, your whisky can't help but attract more eyes and more sales. Try it as a new (and less expensive) way to get preferred display position.

4. **A Transparent Package For Umbrellas.** Here is something to induce a retailer to bring an umbrella out of hiding and actually put it on display! Here's something to set *your* umbrella head and shoulders above competition.

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Whatever your packaging need, you can have all the advantages of Ritchie's money-saving manufacturing facilities, 74 years experience, and merchandising-minded design service. Write today and tell us your problem.

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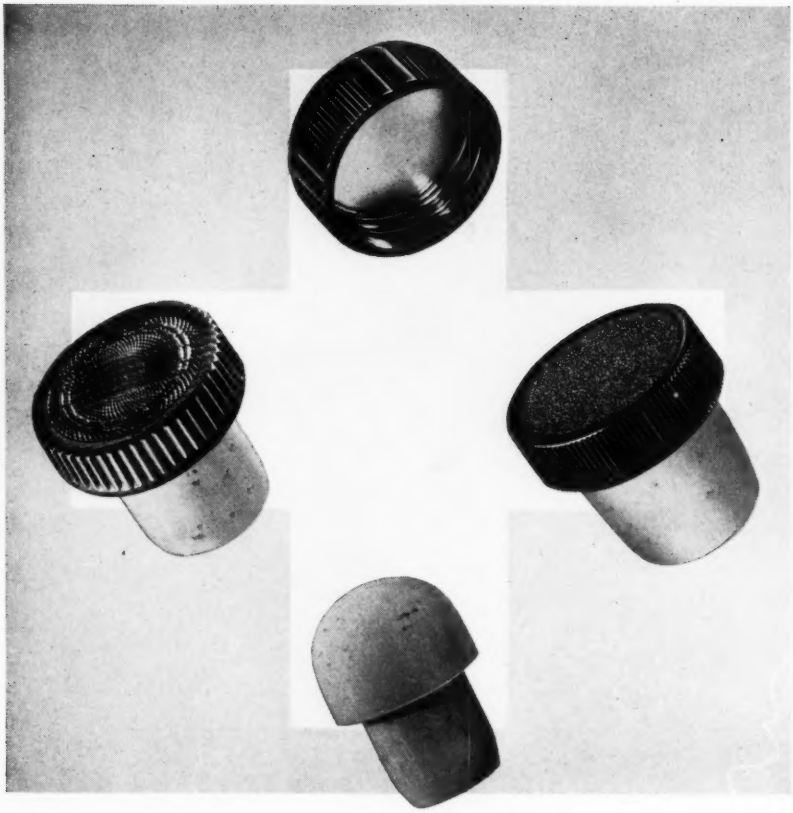

MUNDET CLOSURES offer style and service. They have good looks plus built-in perfection. Their smooth and dependable sealing preserves the perfection of your product . . . builds consumer good will. Having specialized in the manufacture of cork closures for more than 70 years, we have the equipment and experience to produce the finest standard types and to make specialty closures of unusual design for specific requirements.

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- aid the customer in his use of your product by insuring quick, easy opening and resealing.
- aid you to retain and increase good will by preserving the quality you put into your product.

Mundet Molded Flange Closures and Embossed Wood-top Corks are made in standard sizes, in black or in colors. Your own trademark design can be included on the closure top. Flange Closures are only one of many types made by Mundet. If you have a closure problem it will pay you to have Mundet laboratory and art specialists cooperate in its economical solution. Address: Mundet Cork Corporation, Closure Division, 65 South Eleventh Street, Brooklyn, N. Y.

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Not 1...but 2

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FOR only a small fraction of a cent you can give your package extra color and beauty *plus* a safeguard against tampering and contamination of the contents! How? Simply by applying a modern "Cel-O-Seal" cellulose band.

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DU PONT

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GLASS & CLOSURE DIV., Lancaster, Pa.

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We have many special exclusive processes such as Cameoflex, Brocade, etc. Accurate work done in both foil and pyroxylin papers. Inquire of our complete service to answer every specialized need.

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FOR PRACTICAL STYLING AND P

ND PROFIT-WINNING CONTAINERS

BRING YOUR GLASS PACKAGE MERCHANDISING PROBLEMS TO ARMSTRONG

WHEN you bring your glass packaging problems to Armstrong you obtain the *right* glass container and closure for your product. This assures you of a practical combination of well-organized packaging units and the kind of attractive styling which does a real merchandising job.

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All these sales-aids are yours if you enlist the help of Armstrong's Package Merchandising Department; this service is available to all customers. For full details, write Armstrong Cork Co., Glass and Closure Division, 916 Arch St., Lancaster, Pa.

Armstrong

IS GLASS PACKAGING HEADQUARTERS

1941 PACKAGING CATALOG

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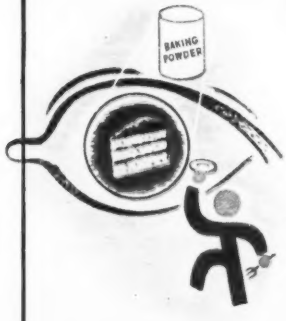
Yes, it will be bigger and better than ever before.

Price: $2.50. An order *now* will insure your copy.

1941 PACKAGING CATALOG

Published by BRESKIN PUBLISHING CORPORATION

122 EAST 42nd STREET NEW YORK, N. Y.



DRAMATIZATION • Modern sales-psychology says, "Use pictures to project ideas." No wonder then, that smart package designers are turning more and more to the pictorial motif to sell the product in the container.

As a pioneer in creating packages that sell, *Continental* long ago sensed the possibilities of dramatization. The suggestions shown here illustrate the imagination and skill of *Continental's* artists, at your service should you need their help.

But correct design is only the beginning of successful packaging. Perfect reproduction is also essential. The craftsmanship of *Continental* engravers, masters of the art of lithographing on metal, is your assurance of excellence no matter how intricate the design.

One of a Series Devoted to Packaging Ideas. Copyright 1940 by Continental Can Company, Inc.

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WHAT'S BEHIND THE NAME *Riegel*

Our trade name is more than just a mark of identification upon the papers we make. Behind it lie many things that time and space prevent most people from seeing personally. Behind it is a 78 year history that runs parallel with the growth of America as a great industrial power — a record of constant technological improvement — a business built upon the principle that there is no substitute for work, skill and integrity. Behind it lie modern mills, ample resources, able management and loyal employees. All these things are translated into one visible outward symbol — our trade-mark — which now appears on over 230 different packaging, printing and industrial papers. Among them are items for the farmer, the consumer and the one-man business, as well as for the industrial giants of our nation. Among them you, too, can undoubtedly find the right paper to serve your purpose from a combined standpoint of quality, economy and production efficiency.

RIEGEL PAPER CORPORATION

342 MADISON AVENUE NEW YORK, N. Y.

YOUR

"WHAT A MARVELOUS FLAVOR THESE BEANS HAVE— THEY TASTE HOME-COOKED!"
"THEY'RE THE SAME BRAND . . . BUT THEY'RE PACKED IN Glass!"
YOUR BRAND BAKED BEANS IN Glass POTS
YOUR BRAND BAKED BEANS IN Glass POTS

Anchor Hocking glass bean pots come in both individual and family sizes—amber or crystal, stippled or plain finish. The cap shown is the AH-N. Write for full details.

BAKED BEANS

WILL SELL FASTER PACKED IN GLASS BEAN POTS

BECAUSE Glass PRESERVES THEIR TRUE FLAVOR

● You will never know how good your own brand of baked beans can taste till you've packed them in glass. Glass preserves their true flavor unimpaired—so they have that fresh-cooked taste.

Other packers have found this out—that's why they have stepped up their sales by packing their beans in individual Anchor Hocking glass bean pots. So sensational is the difference in taste that customers willingly pay a penny more for the same identical product. *Packing your beans in glass opens up to you the quality market that wants the very best, without any other change in your product.*

Here are other features of these individual or family-size bean pots that stimulate sales. They look better—have more appeal. Individual bean pots have always stood for quality. Some people warm the individual pots in warm water or the oven and serve right from the original container. The pots thus eliminate extra dishes and cooking utensils, provide a safe way to store leftovers in the refrigerator. Restaurants particularly find this individual service attractive to the customer.

Added up you'll seldom find a container with such an appealing array of features—features that have stepped sales way up for other packers and will for you. Let your Anchor Hocking man give you all the details or write us TODAY. There's no obligation of course.

ANCHOR HOCKING GLASS CORPORATION . . . LANCASTER, OHIO

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ANCHOR HOCKING GLASS CAPS

-an unbeatable combination

MEET THE 3 Musketeers OF GOOD PACKAGING!

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GOOD WORKMANSHIP

LUMARITH PROTECTOID
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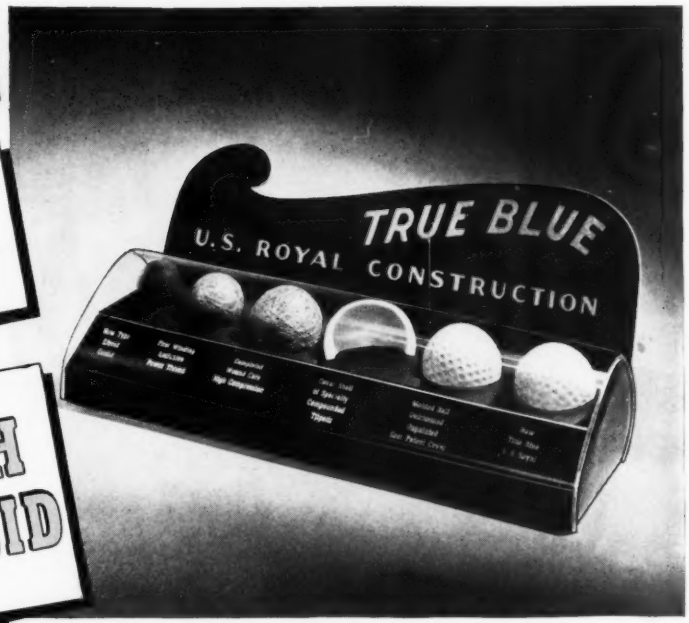


True Blue Golf Ball display by Allrue Container Corporation, Brooklyn, N.Y.

"Heavenly Twins" package by Hygienol Company, Inc., New Rochelle, N. Y.

FINE DESIGN . . . good workmanship . . . and Lumarith Protectoid! They're "all for one" purpose — increased sales through more attractive packaging.

Lumarith Protectoid solves all kinds of problems in "transparents"—including wraps, envelopes, rigid containers, and laminations. It never shrinks or wrinkles. It does not discolor or dry out with age. It is not affected by extremes of temperature or humidity. It has a perfect printing surface.

In addition, you receive the advantage of Celluloid's Technical Advisory Service — covering design and construction problems, and cements that work perfectly with all formulas of Lumarith Protectoid.

If you buy transparent packages, specify Lumarith Protectoid. If you sell packages, use it!

Packaging Division, CELLULOID CORPORATION, 180 Madison Avenue, New York City. Established 1872. Sole Producer of Celluloid and Lumarith. (Trademarks Reg. U.S. Pat. Off.)

If you are working on a transparent package . . .

Get in touch with CELLULOID also Headquarters for PLASTICS

We're not neutral... *just impartial*

"... and may the best man win!" says the Owens-Illinois representative. No referee ever said that with more sincerity than we say it in the battle of Glass versus Metal for preference as a packaging material.

Owens-Illinois makes containers of glass and of metal. We are not neutral, for we are on *both* sides. We *are* impartial—and that means something to you if you market packaged products.

It means you get unbiased counsel from an organization equipped to deliver either metal or glass containers, whichever your product needs. You benefit by many pioneering advances in both fields, such as Duraglas containers and exclusive new metal package ideas. You get practical advice from men experienced in solving production problems, should you change from metal to glass or glass to metal. You get expert help from our Packaging Research Laboratory on any phase of designing, processing or packing.

Nor is that all. Your package can be completed to your—and your customers'— satisfaction with Owens-Illinois metal or molded closures. And delivered to your plant in O-I-made corrugated shipping cartons.

All this you get in full measure when you put your packaging questions up to Owens-Illinois.

OWENS-ILLINOIS

Packaging Service

GLASS CONTAINERS • METAL CONTAINERS • CLOSURES • SHIPPING CARTONS

Owens-Illinois Glass Company, Toledo • Owens-Illinois Can Company, Toledo
Libbey Glass Company, Toledo • Owens-Illinois Pacific Coast Company, San Francisco

No Matter Where You Find It

. . . on the air or at your product's point of sale . . . the acclaim of approval goes to the STANDOUT performer. Sefton Fibre Containers have the essential STANDOUT features that help a product, an all-star sales performer. Adaptability, attractiveness, durability, economy, moisture resistance, modernness in design . . . these important sales essentials you'll find in Sefton products. May our packaging specialists show you how they can help you?

SEFTON FIBRE CAN COMPANY

Plants—St. Louis, Missouri • New Iberia, Louisiana

DISTRICT OFFICES: Los Angeles, San Francisco, Denver, Tampa, Chicago, Des Moines, New Orleans, Boston, Detroit, Kansas City, St. Paul, Omaha, New York, Cincinnati, Cleveland, Oklahoma City, Pittsburgh, Memphis, Nashville, Dallas, Houston, Salt Lake City, Seattle

"What do you mean by ENGINEERED-PRECISION?

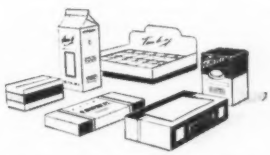
—and why does it mean better folding cartons?"

I'M GLAD YOU ASKED those questions. *Engineered-precision* is a precise technical control developed by Gardner-Richardson that assures better boxboard, better printing, folding, sealing, because everything is scientifically checked—nothing is left to chance.

1 FOR EXAMPLE, here is a Gardner-Richardson technician pre-determining the folding, bending and printing qualities of the pulp before it goes to the board machines. By knowing in advance that the fibres have the right moisture content, the right "guts" and felting qualities, Gardner-Richardson is able to maintain the quality of its boxboard—year in and year out.

2 THE BOARD IS TESTED at regular intervals as it comes from the machines . . . for tear, bend, smoothness, scoring and sealing qualities. Gardner-Richardson makes sure that the board will perform right—on a printing press as well as in the scoring and gluing machines.

3 PICK UP A HANDFUL of Gardner-Richardson cartons. Notice the cleanness of the printing, the brilliance of the colors. Notice how true and square they fold. Better cartons? Yes—*they're precision-engineered!*



In the two complete Gardner-Richardson plants, science is on the job, checking, testing and proving every step of the way. That is why Gardner-Richardson can mass-produce cartons that have more "sell" on a shelf . . . cartons that click through filling machines with fewer jam-ups, less waste.

We will gladly send you samples of Gardner-Richardson Engineered-Precision Cartons, or quote on your requirements. Write.

THIS SYMBOL *is your assurance of greater uniformity, higher quality, better appearance, better product protection—profit and satisfaction.*

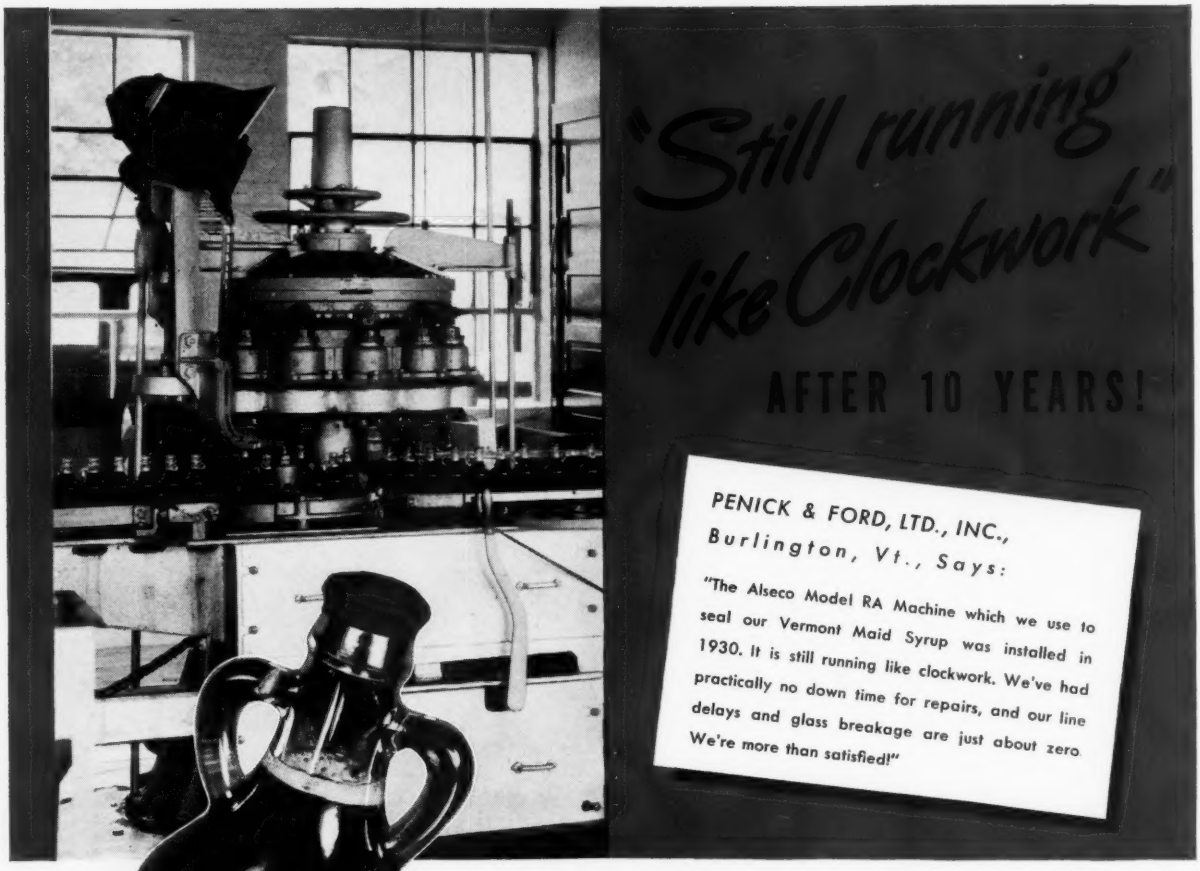
GARDNER-RICHARDSON — FROM PULP TO FINISHED PRODUCT — ENGINEERED PRECISION

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT



"Still running like Clockwork"

AFTER 10 YEARS!

PENICK & FORD, LTD., INC.,
Burlington, Vt., Says:

"The Alseco Model RA Machine which we use to seal our Vermont Maid Syrup was installed in 1930. It is still running like clockwork. We've had practically no down time for repairs, and our line delays and glass breakage are just about zero. We're more than satisfied!"

Quite a record! But not unusual among users of Alseco Machines. Long experience has resulted in machines with all the "bugs" worked out. All the way from simple hand-operated models to high-speed automatic installations, Alseco Machines are smooth-running and trouble-free.

Part of their efficiency, of course, is due to the design of Alseco Aluminum Seals. For example, the Goldy Reclosure Seal which Penick & Ford uses. Its design and method of application practically eliminate glass breakage. The Goldy is tight enough to hold the vacuum created in hot packing. It is tamperproof. Yet it is easy to open, a gentle pull on the smooth, round tab releases the sealing disc so it simply lifts off. Lugs on the disc make it a handy reclosure, slips right back on again.

AT YOUR SERVICE: 26 YEARS OF EXPERIENCE BUILDING QUALITY SEALS AND SEALING MACHINES TO FIT THE NEEDS OF THE USER.

FOR SAMPLES AND PRICES OF ALSECO SEALS, WRITE ALUMINUM SEAL COMPANY, 1345 THIRD AVE., NEW KENSINGTON, PENNA.

ANOTHER TOUGH PROBLEM

The package illustrated was fabricated by W. C. Ritchie & Co. for Reed Candy Co. The design called for a particularly tough and resilient material, one that would stand hard usage and that could be scored and formed without breaking —even with continuous bead around the top of the package.

Ethofoils' THE ANSWER!

● **ANSWER:** Other materials were tried and the breakage on the corners both during fabrication and after fabrication was so high that the design was about to be changed. ETHOFOIL* was tried on this package and because of its toughness under any conditions of low temperature and low humidity there was no breakage during fabrication or when the box was in service. So again the boxmaker was able to give his customer a package of the design he had selected.

Among its other advantages, ETHOFOIL is outstanding for easy printability—does not become brittle with age or discolored from light. ETHOFOIL'S low moisture absorption and stability to heat make it highly resistant to warping.

ETHOFOIL is freely adaptable to varying needs. It is available in thicknesses up to .020" and it can be supplied in sheets or rolls either transparent or colored. For more complete information write the Cellulose Products Division of

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

*Trade Mark Reg. U. S. Pat. Off.

DOW

Larry Lithwite says:
You can count on me for better printing results—and to save money, too.

PUT THE GLASS ON *Lithwite*

Take a squint at the sharpness of the halftones, the crispness of the type. It's that smoother, harder surface that does the trick!

NO wonder pressmen give Lithwite a great big hand! This better boxboard saves make-ready time, because it is so uniform – free from hills and valleys. Inks lay more evenly, come up brighter, go farther because there is less absorption. Lithwite's surface is hard, smooth, fuzz-free – and white. It's a better folding and sealing boxboard, too. The pulp has the right fibre formation – the right degree of hydration. Lithwite is precision-engineered!

CONSTANT AS THE STARS

Lithwite is always uniform in color, caliper and printing surface, because it's produced under the industry's most scientific system of check and control. It's precision-engineered!

See for yourself in your own plant. Write for Lithwite test sheets. Test them on a press . . . compare the results with the board you are now using. Write for those test sheets of this economical Lithwite today!

HAVE YOU A BOARD PROBLEM? *Tell us about it. If we do not have just the board you need, our technical staff will gladly work out one to meet your specifications.*

THE GARDNER-RICHARDSON CO.

MANUFACTURERS OF FOLDING CARTONS AND BOXBOARD
MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: Philadelphia • Cleveland • Chicago • St. Louis • New York • Boston • Pittsburgh • Detroit

KIMBLE GLASS VIALS

A Crystal Container for Every Purpose!

PATENT LIP VIALS ★ RE-SEAL-IT VIALS ★ APPLICATOR VIALS

SLIP-CAP VIALS ★ DROPPER VIALS ★ SCREW-CAP VIALS

GOLDY SEAL VIALS ★ RING NECK VIALS ★ SHELL VIALS

For A NEW VERSION OF YOUR *OLD* PACKAGE
A RAPID ACCEPTANCE OF YOUR *NEW* PRODUCT *Consult Kimble*

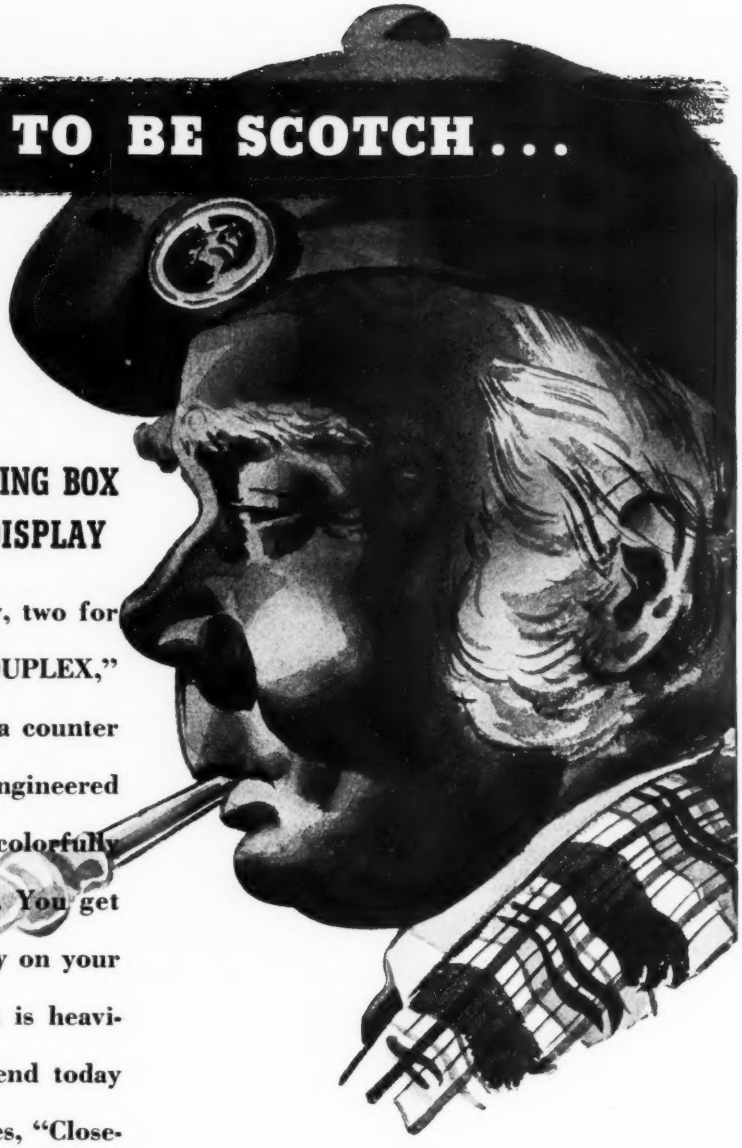
• • • The Visible Guarantee of Invisible Quality • • •

KIMBLE GLASS COMPANY • • • • VINELAND, N. J.

NEW YORK • • CHICAGO • • PHILADELPHIA • • DETROIT • • BOSTON

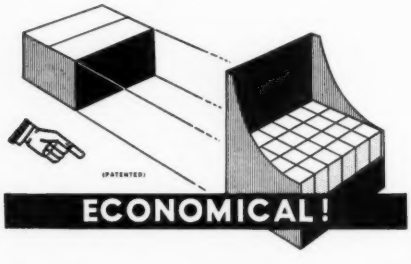
©1940 KIMBLE GLASS CO.

IT PAYS TO BE SCOTCH . . .



When you can buy a SHIPPING BOX that is also a COUNTER DISPLAY

Here's a dual-use, double duty, two for one bargain. It's the "H & D DUPLEX," the shipping box that is also a counter display. You get a strong, engineered shipping box, complete with colorfully printed advertising message. You get also a self-perpetuating display on your dealer's counter, where traffic is heaviest, where sales are made. Send today for the portfolio of case studies, "Close-ups of Successful Shipping Boxes."



Better See H & D

. . . AUTHORITY ON PACKAGING

HINDE & DAUCH • **Executive Offices, 4014 Decatur St., SANDUSKY, OHIO**

Factories in Principal Cities • Canadian Address: Toronto, Ontario

A prating barber asked Archelaus how he wanted his hair cut. He answered: "In silence."

—PLUTARCH

The new trends in store design and merchandising bring consumer and package face to face. There is no intervening counter — and no salesman to praise or condemn.

Your product is on its own and the consumer's reaction is governed by the story your package tells him. If your sales presentation gets across, the shopper says "I'll buy" and the sale is consummated.

There's a certain art in designing a package that will speak plainly and straightforwardly about a product. It takes experience to master it, and a forward-looking attitude to keep abreast of the day-to-day changes in consumer preference.

We believe our design department has the necessary qualities to create an effective glass package for your product whether it be a cosmetic, food, drug, or household specialty. And our "3-point" service will manufacture it to bring out (1) Beauty, (2) Practicability and (3) Economy.

"3-point" service scores again with this graceful Roman vase for a famous skin balm. Molded rattan design around the base completes the ensemble.

Carr-Lowrey Glass Co.

Factory and Main Office: BALTIMORE, MD.

New York Office: 500 Fifth Avenue • Chicago Office: 1502 Merchandise Mart

★

Barrington Hall Soluble Coffee, Edgeworth Tobacco and Alka Seltzer are now packed in heat-sealed Alcoa Aluminum Foil for protection, convenience and economy.

★

3 THINGS WORTH KNOWING ABOUT MOISTURE PROTECTION

MOISTURE PENETRATION TESTS* made with various wrapping materials point up these outstanding facts which are of interest to any packer whose products must be protected against gain or loss of moisture:

1. You get *good* protection with moisture-resistant cellulosic wrappers, if heat-sealed at the seam and laps.

2. You get *better* protection with moisture-resistant cellulosic wrappers, heat-sealed, *plus* Alcoa Aluminum Foil, not sealed.

3. You get *greatest* protection with Alcoa Aluminum Foil alone, if heat-sealed at the seam and laps.

Heat-sealed Alcoa Aluminum Foil packages are a development warranting close study by all manufacturers who must safeguard their product from moisture change. Such packages are perfect for many hygroscopic products; also, for those whose natural moisture content must not diminish before reaching the user.

Heat-sealed foil packages may take the form of bags, envelopes or folded wrappers. Forming, filling, and sealing them is a rapid, economical operation on fully automatic machines.

Investigate this new type of moistureproof, lightproof, air-tight package. It may well be the answer to your own problem of preserving freshness. Address your questions to ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh, Penna.

ALCOA
ALUMINUM

ALCOA

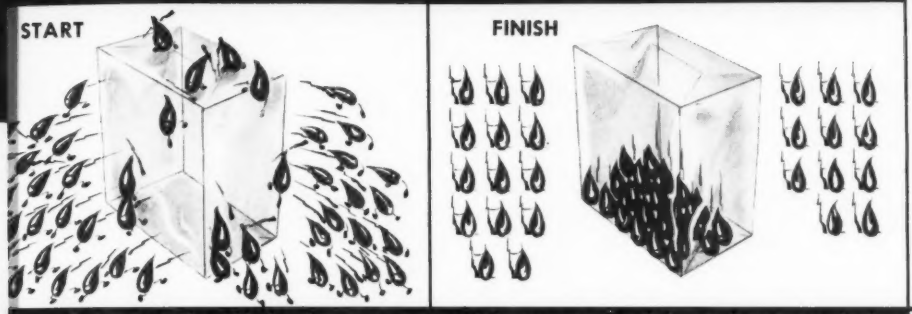
✲ Results of Moisture Penetration Tests on Commonly Used Wrapping Materials

These tests were conducted by the Aluminum Research Laboratories. Actual packages were used. To those who desire it a more detailed report is available upon request.

The percentage figures show relative permeability, not actual amounts of moisture passing through the wrappers. The amounts which actually permeate the package are dependent on time and on the difference in humidity inside and outside.

All the wraps involved were standard materials in common use. The Alcoa Aluminum Foil was .00035-inch thick. Heavier gauge foil, .0007-inch and thicker, has an extremely low permeability and is recommended for most heat-sealing applications.

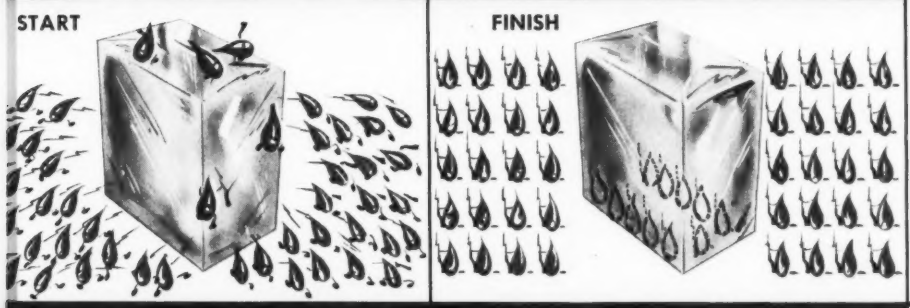
1 Lacquered cellulosic wrapper with seams and laps heat-sealed



Compared with a wrapper offering negligible protection (100% permeability assumed), this wrapper showed a moisture permeability of

43%

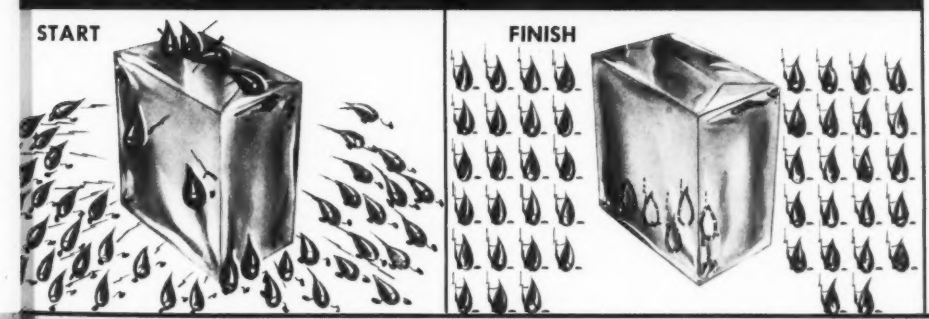
2 Lacquered cellulosic wrapper with seams and laps heat-sealed PLUS an inner wrap of Alcoa Aluminum Foil, not sealed



On the same basis of comparison, this combination wrapper consisting of foil and cellulosic sheet showed a moisture permeability of

22%

3 Alcoa Aluminum Foil alone with seams and laps heat-sealed



Heat-sealed Alcoa Aluminum Foil alone, on exactly the same basis of comparison, showed a moisture permeability of but

10%

ALUMINUM FOIL

ENTER THE 1940 *All-America Package Competition*

NO FEES • NO OBLIGATIONS

The only national package competition of 1940, the 10th All-America Package Competition will contain the outstanding packages, displays, production lines of the past year.

The All-America is the most important institution of packaging. It is run for the advancement of packaging, the competitive aspect stimulating package creation by giving manufacturers the change of having their packages judged by experts in comparison with leaders in all fields. The winners fall heir to an untold volume of publicity that has increased each year, flowing through every channel of news into every type of medium: radio, television, newspapers, magazines, trade publications. Millions upon millions of readers and listeners are told about the leading packages through the publicity bureau provided by Modern Packaging Magazine. Every entry is placed on exhibition in the huge display rooms, also provided by Modern Packaging. Last year fully 30,000 packages were entered and displayed, viewed by many thousands of consumers, manufacturers, buyers.

All of the prestige and publicity accruing to entries may be yours without fee or obligation.

Make as many entries as you wish. Only stipulation: package, display, machinery must have first been used, or planned, or marketed, or designed during 1940. Write for as many entry blanks as the number of entries you plan to make.

10th ALL-AMERICA PACKAGE COMPETITION

Sponsored by Modern Packaging

CHANIN BUILDING · 122 East 42nd Street, New York City

We Are Thankful

for the loyalty of our customers and their continued increasing demand for SYLVANIA* CELLOPHANE.

Copr. 1940 Sylvania Ind. Corp.

Sylvania Cellophane

SYLVANIA INDUSTRIAL CORPORATION

Executive and Sales Offices: 122 E. 42nd Street, New York — Works: Fredericksburg, Va.

Branches or Representatives:

ATLANTA, GA..... 78 Marietta Street
BOSTON, MASS., 201 Devonshire St.
CHICAGO, ILL., 427 W. Randolph St.
DALLAS, TEX. 812 Santa Fe Building
PHILA., PA... 260 South Broad Street

SYLVANIA CELLOPHANE

Pacific Coast:
Blake, Moffitt & Towne
Offices & Warehouses in Principal Cities

Canada:
Victoria Paper & Twine Co., Ltd.
Toronto, Montreal, Halifax

*"SYLVANIA" IS A REGISTERED TRADE MARK FOR CELLULOSE PRODUCTS MANUFACTURED BY SYLVANIA INDUSTRIAL CORPORATION

This photograph shows how a number of America's smartest merchandisers profited in 1940 from Nashua "Package Appeal"—packages made more salesworthy with the help of Nashua creators, chemists and craftsmen.

These items show but a few of the many ways in which Nashua papers are being used — for year-round as well as special holiday appeal. Smart designs, clever blending of ink and paper in attractive color combinations are here — ready to work to make more sales for you.

Plan to get out in front of the parade of your competitors by adopting one of these famous Nashua papers—in a standard design or one of your own. You can depend upon Nashua *creators* for designing assistance, upon Nashua *chemists* for rigid control over materials and manufacturing methods, and upon Nashua *craftsmen* for uniform quality. They all combine to "make paper make money for you."

YOUR GUIDE TO 1941 PACKAGING SUCCESS—WRITE FOR IT TODAY

Nashua planned this booklet—called "Make Paper Make Money for You"—for packaging men searching for new ideas and a better source of supply. It's a free booklet, but it will be worth money to you. On your company letterhead, address Nashua Gummed And Coated Paper Company, Dept. M-11, Nashua, New Hampshire.

CREATORS • CHEMISTS • CRAFTSMEN

NASHUA

MAKES PAPER MAKE MONEY FOR YOU

Look for the Triangle NASHUA Sign of a Nashua Value

MODERN PACKAGING

NOVEMBER 1940 VOLUME 14 NUMBER 3

How the packaging industries may be affected by wartime economic changes and what you can do to prepare for any contingency

"I hear there will be a tin shortage if war comes."

"I hear they've got a substitute for tin cans."

"Better stock up on fancy papers—won't be able to get them for love or money in six months."

"There aren't going to be any shortages on anything whether we get into the war or not."

* * *

The rumor-mongers have been working double time in the last six months. They have successively predicted paper shortages, metal shortages, glass shortages, rubber shortages, bottle shortages, closure shortages, bag shortages, glue shortages and even liquor tax stamp shortages.

On the other hand, the "rumor-allayers" have likewise been working over time. They have come forward with substitute containers capable of matching every one of the shortages listed above and many more.

Both groups of alarmists and predictors have found a curious lack of skepticism on the part of the hardboiled press. Publications which pride themselves on their accuracy and their ability to distinguish news from rumor have fallen over themselves in their readiness to accept and print virtually any rumor regarding shortages or any claim of a development capable of meeting a rumored shortage.

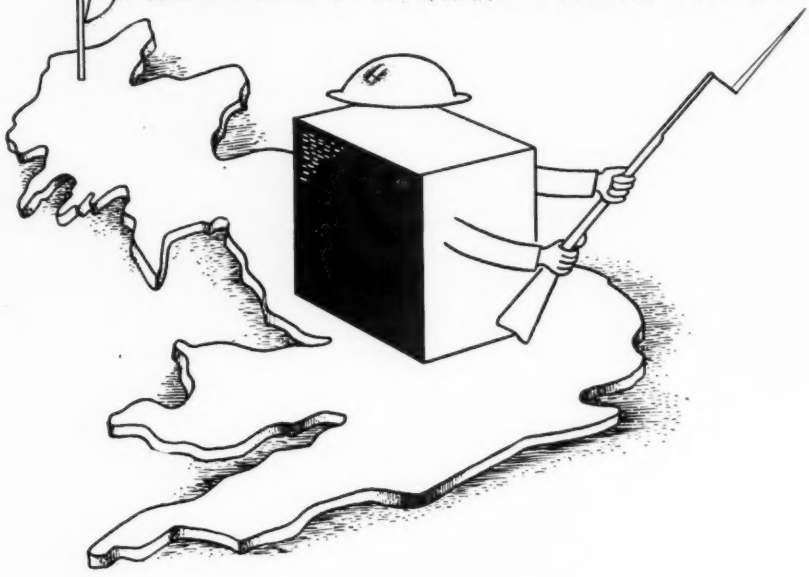
No wonder, therefore, that packagers have begun to show a degree of alarm. It is remarkable, rather, that they have thus far been able to preserve a high degree of calm under the high winds of rumor and prediction.

It is not enough, however, to dismiss all talk of shortages as mere rumor-mongering. It is not satisfactory to dismiss all talk of substitutes as if it were inspired by those who would foist substitutes upon us. For, if war comes closer to us than it is today, it is undoubtedly true that the packaging industries will be affected to a degree. It is undoubtedly true that there will have to be certain adjustments, both due to the restricted availability of some packaging materials and due to changes in price relationships between other types of packaging materials.

It is the purpose of this study to separate rumor from fact and to determine—insofar as it is possible to do so—just what effect a state of war might have upon the packaging picture. In doing so, the Institute of Package Research presents, for the first time in the American press, data on how countries at present engaged in war have met their problems of package material availability.

Supplementing these data, we present a picture of each branch of American industry concerned with supplying packages or package parts or materials. The reader may thus establish, for his own enlightenment, an estimate of the degree to which the American situation is similar to or differs from the situation in Europe. The British, for instance, suffer from an acute paper shortage as a result of the war. To the average rumor-monger, the conclusion seems inevitable that if this country were engaged in war, a similar paper shortage would follow immediately upon the issuance of the Presidential Declaration. An examination of the differing economic basis of the American paper industries and the British industry discloses, however, that such is not necessarily the case. Far from having to replace paper packages with other types of containers, the situation in this country might be reversed with paper expanding in use in certain fields to replace other materials. This single instance is cited here as but one of a number of examples which the following pages will disclose—examples of the often-ignored differences between situations in this hemisphere and parallel, but not necessarily identical, situations abroad.

War Packaging in Great Britain*



A Survey BY THE INSTITUTE OF PACKAGE RESEARCH

The British have long been inured to Government regulations. Yet, today they are taking a degree of regulation far greater than they had ever previously imagined possible—and taking it in their stride. Their ingeniousness in adapting themselves to scarcities, quotas, allotments, restrictions and prohibitions has proved truly amazing.

Major shortage has been in the paper trades due to the cutting off of Finnish, Swedish and Norwegian pulp sources and due to the need for conserving overseas cargo capacity for more essential war imports. Other shortages, however, are found in certain branches of the plastics field, sections of the glass industry, in the metal container field and in the wooden box branches. Displays are highly restricted, particularly types utilizing paper, and aluminum for container and closure purposes is, perhaps, most restricted of all.

On the other hand, pottery, made from domestic materials as it is in England, is achieving a new vogue and a number of innovations have been developed in the field which would probably not have been initiated had not the manufacturers been forced to turn to pottery due to the unavailability of more familiar materials. Transparent films for protective purposes are increasing in use, the material being considered as a more available substitute for paper.

* While material for this section of our survey has been gathered from various sources, we are particularly indebted to the British counterpart of Modern Packaging, "Shelf Appeal," for the majority of the facts contained herein and for the principal evaluations of these facts.

Paper Control

What DORA (Defense of the Realm Act) meant to harassed pub keepers of the last war, Paper Control now means to package producers and packagers of Great Britain. The Government issued a series of Paper Control orders on May 27, 1940, which provide extremely drastic restrictions upon the use of paper in packaging for domestic purposes. The Control orders are designed to permit a reasonable protection of contents. They are designed to forbid extravagant or purely decorative uses of paper. Advertising matter is considered unessential. Extravagances of any sort are rigidly forbidden.

Thus one section of the Control orders reads: "*No person shall, in wrapping or packing any article for wholesale distribution, use any greater quantity of paper wrapping or packing material than such as is reasonably required for the projection of the article.*" This is interpreted as eliminating the use of stiffeners and the various forms of padding which are used to prevent small objects from bouncing around in oversized cartons. Likewise eliminated is the oversize carton itself. "Shelf Appeal," journal of British packaging industries, interprets the clause as ruling out the use of brown paper wrappings on pre-packed goods and of printed cover papers. Even if a low grade of board is now used for the package, the user, it is believed, will have to be content with printing directly on it instead of printing on a cover paper, except where the cover

Square box economies

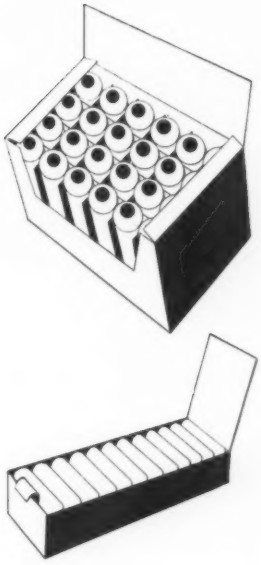
1. Thinner material to be substituted wherever possible.
2. All slide portions of the match-box type to be unlined instead of single-lined; no label to be placed on the box portion.
3. Lift-off lids to be unlined wherever possible; depth limited to half-an-inch.
4. Bottom labels to be omitted except where absolutely necessary.
5. Coloured edges and other refinements to be omitted.
6. Depth of outer to be halved, so that the lid, when placed over the inner, meets the bottom portion.
7. Coloured boxes: racks have been redesigned to use 50 per cent. less material.
8. All flanged work on rigid boxes is being eliminated.
9. Ends to be let-on separately on a much larger range of boxes, eliminating waste material cut out at corners.
10. Stay-paper at corners to be eliminated wherever possible; where this is impossible, shorter pieces are to be used.

Round box economies

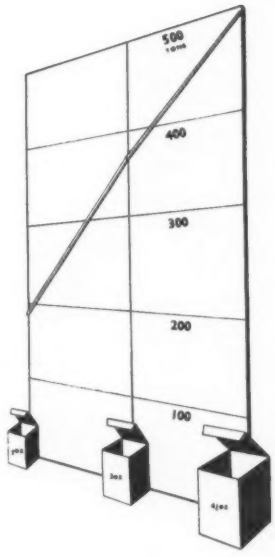
1. Silver lining to be omitted from the bottom card of our patent round box.
2. White lining to be omitted from the inside of standard pill boxes.
3. Strength of bottoms to be reduced in all round boxes.
4. Boxes with shoulders to be replaced by boxes with ordinary loose-fitting lids.
5. Night-light cups to have unlined straw bottoms instead of double-lined straw.

Folding box economies

1. Thinner material to be used wherever possible.
2. Size of box to be reduced to avoid "packing air."
3. Rearrangement of contents so that awkward shapes will be eliminated.
4. Customers are being asked to pack their goods in larger units.
5. Elimination of unnecessary outers.
6. Customers are recommended to pack goods direct into containers.
7. We have reduced the amount of wrapping paper used for packing our cartons and boxes; in many instances have eliminated it altogether.
8. With our customers' permission we are printing slogans on the inner side tabs of cartons. Many millions of these cartons have already gone out to the public.



Above: Collapsible tubes, needing no cartons, could be packed in returnable outers with egg-box divisions. Below: Cakes of soap could be sold, unwrapped, from outers, with a paper tab to permit release of the first cake.



The same weight of board makes cartons for $193^1/_2$ tons of a certain product if the unit pack is $^2/_3$ oz.; $366^1/_2$ tons if it is 3 oz.; $499^1/_2$ tons if the unit is $4^1/_2$ oz.—packing $2^1/_2$ times as much of the product in large sized cartons as in small containers.

Chart I. British proposals for economies in design of containers as published by "Shelf Appeal." Most of these proposals have already been put into effect.

paper can be shown to reinforce the board to which it is attached. If such reinforcement permits the use of a lighter grade of board than would otherwise be necessary for the protection of the contents, it is presumed that a cover paper would be considered allowable, particularly if the combined weight of paper and board were somewhat less than the weight of the alternative all-board package.

Another clause reads: "*No person shall, in wrapping or packing any article for wholesale distribution, use any paper wrapper, carton or container the caliper of which exceeds what is reasonably required for the protection of the article.*" This clause is interpreted as ruling out outer containers of a decorative nature where the individual inner container provides sufficient protection. If carried to its logical conclusion, it might, in some instances, compel the use of bags instead of cartons, since the former utilize less paper, by weight, than do the latter.

Another clause forbids the use of "*any advertising matter inside any wrapping or packing or carton or con-*

(*This section continued on page 96. Part 2 of this survey, "Packaging Under the Axis," starts on page 34. Part 3, "The Domestic Situation," starts on page 36.*)

Packaging Under The Axis*

At first glance, one would expect that the demands of war would have a similar effect upon the availability of supplies and the price structures of all modern industrial countries engaging in war. Such, however, is not the case for a number of reasons.

Primary among these is the differing nature of the economic resources of the various European countries. Products which are domestically available in one country must be imported in another. A second reason for differences in the availability of materials is found in the differing economic levels of the civilian populations in various countries and in differences in the type of army and the degree of mechanization of the armed force in these countries. A third factor of vital importance is blockade. Certain packaging supplies which must be imported into England and which must, therefore, be used sparingly, simply cannot be imported into Germany through the British blockade and must, therefore, be replaced rather than conserved.

Whereas the British have been principally concerned with paper control and the questions of metal container availability have assumed a secondary—but nonetheless important—aspect, both Germany and Italy have placed the greatest emphasis upon the development of metal container substitutes.

German Material Shortages

One of the serious problems affecting Germany's wartime economy is an adequate supply of packing materials. Already prior to the outbreak of war, it was necessary to institute extensive measures of economy and substitution in the use of packing materials and during the war, these measures have become greatly intensified. Germany's packing material problem arises from the fact that to a high degree the nation is dependent upon foreign sources for the requisite raw materials, wood, wood pulp, tinplate, jute and other fibers, etc. The leading packing materials obtainable from domestic sources are glass, plastics, etc., and so great is the demand for substitute containers made of these materials that the producing companies are now taxed to utmost capacity.

No entirely accurate data of Germany's requirements of packing materials are available, but their immense scope is suggested by official estimates that they represent a value of three billion marks annually, calculated upon the basis that around five per cent of the total value of the national production is represented by the cost of packing materials. Owing to refinements in the distribution of merchandise, extensive marketing of goods in individual containers rather than bulk, increased use of packing materials, multiple wrappings, elaborate packaging, etc., for improving the market attractiveness of products, etc., Germany's current requirements of packing materials are far greater than during the World War. On the other hand, technical achievements of recent years, development of plastic materials, new types of cellulose containers, impregnated articles, coated metals, etc., have widened the possibilities for substitution of more abundant materials for scarcity materials.

Despite progress in substitution, however, packing materials generally are very scarce and in some branches of industry, manufacturing operations are retarded by shortages of requisite containers. Efforts toward substitution have been impeded by difficulties presented by shortages of the substitute raw materials, established technical methods employed by various manufacturing industries, such as use of automatic packaging machinery and transport factors such as shortages of railroad rolling stock, restrictions upon use of automotive vehicles, high transport charges for empty containers, etc., all conducing to render difficult and expensive the use of substitutes and re-use of old containers.

Chief among substitute measures for easing the container shortage have been the substitution of paper for jute sacks, glass for tinplate and other metal sheet containers, paper for wood, impregnated cardboard for metal sheet, etc., and the careful recovery, repair and reuse of all kinds of containers and packing materials,

* The data herein contained is based upon reports of American consular authorities in Germany and Italy, filed recently with the Department of Commerce.

barrels, boxes, sacks, etc., wherever possible. Measures for accelerating the return of empty containers to filling plants, reduction of stocks of goods in containers and of empty containers in the hands of distributors, etc., have contributed to easing the container shortage.

One of the most notable substitution achievements has been the replacement of tinplate, to a considerable extent, by other materials in the manufacture of containers, such as untinned sheet, glass, impregnated cardboard, etc. Already in 1937, the use of tinplate was forbidden for packaging such articles as biscuits, cigarettes, shoe polish and related goods. Upon the outbreak of war, the use of tinplate was forbidden for packing conserved foods and the use of tin forbidden for manufacturing collapsible tubes. Owing to the acute shortage of aluminum caused by the war, it was impossible to base the manufacture of either food containers or collapsible tubes upon this metal, as had been previously planned. For meeting this situation, the food packing industry resorted to various expedients, such as increased distribution of low-temperature frozen foods, use of untinned metal containers, glass containers, etc. For dispensing with the use of tin, containers are now used made of untinned sheet covered by a film of synthetic resin lacquer and plans have been drawn up for the large-scale manufacture of untinned plate cans treated by the Bonder phosphate rust-proofing process. The heavily increased demand for glass containers has given such an immense impetus to the glass container industry that, despite operating at full capacity, it has been unable to supply all of the existing demand.

Research work, already in progress before the war for developing collapsible tubes made of plastic materials as substitutes for metal, became greatly intensified and it is reported that five or six different types of tubes made of these materials have been developed that are serviceable for packing various materials hitherto marketed in metal containers. It is stated that already production of each of these new types of plastic collapsible tubes amounts to somewhat over one million tubes per month.

Materials like paints, floor wax, automobile lubricants, oils, fats, cough remedies, etc., which formerly were packed in metal cans, are now marketed in new types of impregnated-cardboard containers. Some of these impregnated-cardboard containers consist of the main body or casing made of impregnated cardboard with tops and bottoms made of untinned metal sheet. Containers made of these combined cardboard and metal materials have achieved success especially for packing automobile lubricating oils, fats, etc., dry chemicals, etc. A specially treated fat and water-proof cardboard, known under the name "Perga," has been found particularly suited for making these combined containers. "Perga" cardboard can be used as an insert for containers made of cardboard, cellophane, etc., for packing various kinds of products.

Standardization of packing for various lines of products, to mention only such a leading one as cigarettes, as well as dispensing with packing altogether for various other products, such as soap, etc., have enabled extensive savings in consumption of cellulose, wood and other packing materials. Considerable savings in cellulose have also been achieved by substitution of inferior grades of packing paper for more costly types, such as chromo and chromo-substitute carton, etc., as well as prohibition upon use of carton boxes and other outside containers for products already wrapped in paper wrappers.

Tin-less Metal Food Containers

The war, by cutting off supplies of imported tin, has created a serious situation for Germany's food canning industry as regards its requirements of tinplate needed for making cans. Germany normally is dependent upon overseas foreign sources for the great bulk of its tin requirements. Due to the effectiveness of the British naval blockade, its supplies of requisite tin, aside from that reclaimed from old cans and other materials by domestic detinning plants, have been reduced to negligible levels in recent times. Owing to the resultant shortage of tinplate, the canning industry is laboring under a serious shortage of tin cans, resulting, in turn, in a considerable reduction in production of canned foods.

One of the most unfavorable aspects of the economy of almost all of Continental Europe is presented by the shortage of tinplate, seriously reducing the packing of food products. It is reported that in Denmark and some other Continental countries there is a danger of considerable losses of valuable food resulting from the inability of packers to pack available food supplies in metal containers. It is stated that the situation has been aggravated by abnormally increased amounts of food available for packing caused by the excessive slaughtering of livestock, in turn necessitated by the scarcity of cattle-fodder resulting from interrupted supplies of imported cattle (oil-seed) cake. The immense scope of Germany's tin can consumption is shown by estimates placing the national requirements at around 500 million cans annually.

Germany is dependent upon foreign sources for virtually all of its requirements of tin metal and imports of tin advanced from 9176 metric tons in 1936 to 10,320 tons in 1937 and 12,090 tons in 1938. A decrease to 5722 tons was recorded for the first seven months of 1939, from 6843 tons in the parallel period of 1938. In addition to tin metal, Germany imports tin ore and expanded its imports of this ore from 431 tons in 1933 to 6142 tons in 1938. German tin smelters and detinning plants produced 2710 metric tons of tin and 3460 tons of tin alloys in 1937, compared with 2330 tons of tin and 3630 tons of tin alloys in 1936. Thirty-seven per cent of the tin output was obtained from ore

(This section continued on page 102. Part 1, "War Packaging in Great Britain," starts on page 32. Part 3, "The Domestic Situation," starts on page 36.)

The Domestic Situation

A Survey BY THE INSTITUTE OF PACKAGE RESEARCH

As we have stated in the general introduction to this study, it has been our purpose to separate rumor from fact and to determine—insofar as it is possible to do so—just what effect a state of war might have upon the packaging picture. For this reason, we have not discussed, in great detail, a number of the proposed packages which have been advanced by the general press and by some other business publications, as the solutions to wartime problems.

In regard to any such rumor stories which our readers may come across, a word of warning is in order. New packaging processes do not spring full blown out of a copywriter's brain. A lapse of months and, more frequently, of years must occur between the idea and its final reduction to practicality in terms of existing production capacity, existing machines and packaging techniques capable of producing the new package.

In most of the cases recently discussed in the press, this time element has been completely ignored and the packager has been told—either directly or by implication—that a new development was on the immediate horizon. Without prejudice as to any of the new processes and new packages and packaging materials that may be available in the future, we believe we can safely state that no single one of the items which have been recently widely discussed in the press can, at present, be considered as an available alternative for production use by the average packager.

For this reason, we have chosen to analyze the present situation and the effect which war might have upon it in terms of basic package materials rather than in terms of sensational and revolutionary developments about which nothing can be said with certainty and about which much of what has been said is undoubtedly untrue, exaggerated and sensationalized.

Table 1

Year	Apparent tin consumption in the United States	Stock on hand
1930	76,917	5,421
1931	62,872	6,154
1932	35,477	4,280
1933	59,693	4,401
1934	43,638	5,609
1935	62,470	3,356
1936	73,039	3,103
1937	86,663	5,062
1938	50,724	4,668
1939	70,265	4,130

Source: International Tin Research and Development Council

The Tin Situation

Of all packaging materials about which speculation and rumor have centered, none has received greater attention, in the last few months, than tin. American packagers have been told that a tin shortage was imminent. American packagers have been told that there would be no shortage under any circumstances. American packagers have been told just about everything that could be imagined as falling between these two extremes. It is obviously not enough to say that the truth lies somewhere between the extremes. Packagers cannot make advance commitments on the basis of so broad a statement. It is necessary, therefore, to examine the economics of tin production and to determine, insofar as it is possible, the availability of tin for packaging purposes under various possible contingencies.

Let us start by examining the American consumption of tin. As shown in Table 1, the apparent tin consumption of the United States has varied since 1930 between a low of 35,477 long tons in 1932 and a high of 86,663 long tons in 1937. In 1939, we imported slightly in excess of 70,000 tons. Total consumption ran to just about that figure so that little reserve has been built up. In fact, the stock of tin in the United States in January of 1940 was at a low point of 1,749 long tons.

Since the turn of the year, however, sharp steps have been taken to bolster the picture. In the first eight months of 1940, we have imported 82,000 tons of tin, as

PRODUCTION OF TIN BY SELECTED COUNTRIES

In Long Tons

Table 2

Country	Yearly									
	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Malaya	63,974	54,908	29,742	24,904	34,059	45,955	66,806	77,542	43,247	55,945
Netherlands East Indies	34,903	27,480	15,683	14,406	18,678	24,719	31,684	39,825	21,024	31,281
Bolivia	38,146	30,742	20,583	14,725	20,634	27,168	24,074	25,024	25,371	27,185
Nigeria	8,569	7,772	4,263	3,762	4,996	7,029	9,634	10,468	7,313	10,855
China	6,860	5,948	7,406	8,104	8,145	9,398	10,664	10,457	11,246	....
Others	24,348	22,050	21,523	25,699	29,688	34,331	39,038	45,784	41,499	....
World Total	176,800	148,900	99,200	91,600	116,200	148,600	181,900	209,100	149,700	183,700

Source: International Tin Research and Development Council

compared with the 70,000 for the entire year of 1939. In the month of August alone, 22,364 tons were either ordered or afloat, as compared with 5,435 tons in August of 1939.

Further, tinplate production this year has been operating at somewhat less than 50 per cent of capacity —during August at 40 per cent—largely because most producers are carrying heavy inventories. There has, accordingly, been opportunity to build up quite a reserve stock in even the short time since the turn of the year. Present estimates are that we have on hand an adequate supply for approximately ten months of average consumption.

Above and beyond this, the Reconstruction Finance Corp., through the Metals Reserve Co., has contracted with the International Tin Committee for the purchase of 75,000 tons of tin at 50 cents a pound, c.i.f. American ports, to be delivered over the next 12 months. This, it is pointed out, virtually pegs the price of tin at 50 cents for the next year. The contractors, obviously, have taken the whole world situation (including its Far Eastern aspects) into account before concluding their pact.

Let us now turn to an examination of sources of imported tin. The principal source, for many years past, as shown by Table 2, has been the Malay Peninsula, with the Netherlands East Indies running a close second and Bolivia running third.

Under the International Tin Agreement, virtually the entire Bolivian output has been going to British smelters and, at the present time, continues to go there, although some of the pig tin has eventually turned up on the American market. While the Bolivian production has risen sharply in recent months, it is well to keep in mind that production capacity, at its greatest in Bolivia (as indicated by the 1930 high point), comes to only about one-half the American demand. It is further of importance to note that the bulk of Bolivian ore is generally of low quality and that the smelters for Bolivian ore are located on the British Isles. While the Bolivian source is located on a trade route least likely to be cut off from this country, we cannot utilize Bolivian

CONSUMPTION OF TINPLATE

Table 3

	Tinplate used for Canning		Tinplate for uses other than canning	
	Long tons	% of total	Long tons	% of total
1923	661,000	51	630,000	49
1925	719,000	52	664,000	48
1927	702,000	52	646,000	48
1929	894,000	58	647,000	42
1931	715,000	55	578,000	45
1933	738,000	47	841,000	53
1934	791,000	60	525,000	40
1935	961,000	62	600,000	38

supplies unless adequate smelter capacity is constructed in this country. This would involve the building of a completely new industry. The first step in this direction was announced October 19 by Jesse Jones, Federal Loan Administrator, who stated that the Metals Reserve Co., a subsidiary of the Reconstruction Finance Corp., would build a smelter or contract with one of the smelting companies to build and operate a plant to smelt and refine tin ore from Bolivia. Preliminary plans called for the smelting of 18,000 tons of fine tin annually for five years. Cost, allowing for freight and high domestic smelting costs, would be something over 50 cents per pound. The Metals Reserve Co. has agreed with the British to release to them upon request a maximum of 6,000 tons of the ore per year and to consider requests for a larger amount if needed.

The conclusion, therefore, seems inevitable that the greatest source of safety for this country lies in the rapid building up of a stock pile. The Metals Reserve Co. effort has been along these lines and substantial prog-

(This section continued on page 107. Part 1, of this survey, "War Packaging in Great Britain," starts on page 32. Part 2, of "Packaging Under the Axis," starts on page 34.)

Round cans with one-color lithographed labels and attached keys are used for the new 1940 emergency Army ration.

Army adopts new ration

Soldiers use new key-opening hermetically sealed cans with one-color lithographed labels

The U. S. Army has recently developed a new field ration known as Type C and designed for use when and where the regular and orderly messing of troops is interrupted. The ration consists of two units, one of meat and one of bread. Two variances of the meat unit have recently been packaged—one consists of meat and beans, the other of meat and vegetable stew. The new ration, as issued to a soldier, consists of three substantial meals, each contained in two cans or a total of six cans weighing about 5 lbs.

A meal consists of one 15-oz. can of either the meat and beans or the meat and vegetable stew and one can containing enough soluble coffee to make a pint by adding hot water and sugar and $4^1/_2$ oz. of a newly developed biscuit containing milk, sugar, invert sugar, malt, whole wheat and other flours and shortening of high keeping quality.

The new ration is vastly superior to the bully beef and hardtack which are traditionally associated in the public mind with the idea of field rations. The product is palatable, hot or cold, and inviting in appearance. Quantity, nutritive value and bulk run high and the meal is balanced with reference to the content of protein, carbohydrates, fats, minerals and vitamins.

In order to secure preservation against spoilage and gas contamination, hermetically sealed cans of the 300 by 407 round type were adopted, with a key-opening band and attached key to facilitate opening in the field. A 12-oz. rectangular can was considered advantageous, from the viewpoint of conservation of space and convenience in packing in the soldier's pack. The round can was, however, adopted because of its lower cost and because of the limited number of available lines and the slowness in packing involved in the use of the square alternative. The cans have one-color lithographed labels.

Some 303,000 experimental rations have recently been prepared and were used both during the recent maneuvers and in the Panama Canal Zone for test purposes. The most common criticism of the ration to date is reported to be to the effect that it provides more than the average man can eat. If this proves to be the case in actual field use, it is probable that only two meals of this ration will be issued daily, supplemented with a bar of the emergency chocolate ration likewise recently perfected.

The new ration is one of the first fruits of the recent efforts of the Quartermaster Corps Subsistence Research Laboratory which the Army maintains in Chicago.

The ration weighs between 5 and $5^1/_2$ lbs. gross. Substitution of the emergency chocolate bar would reduce the weight approximately $1^1/_2$ lbs. The cost of the ration, as now being produced, is greater than the preceding standard field ration, but it is believed that it can be materially reduced when on a production basis.

Credit: Cans illustrated packed by Miller-Parrot Baking Co. and Stokely Bros. & Co. Cans supplied by American Can Co.

SINGLE SOURCE OF SUPPLY

Burt is a single, reliable source of supply for your large quantity purchasing of:

(1) Boxes (automatically produced)
- **a. Small**
- **b. Round**
- **c. Window**
- **d. Transparent**

(2) Cartons

(3) Merchandise Displays

The production of boxes, cartons and displays in one huge modern plant assures uniformity of quality, color, printing in complete package and display lines. Our plant, equipped with our own automatic box-making machinery, is large enough to meet the greatest demands as to quantity, without sacrifice of famous Burt quality. Central location provides quick deliveries, overnight in many cases to the South, East and Middle West.

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3329 Dupont Ave. South

PHILADELPHIA
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P. O. Box 6308
W. Market St. Sta.

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W. G. Hazen
P. O. Box 2445
E. Cleveland, Ohio.

LOS ANGELES
Louis Andrews
623½ South Grand Ave.

CINCINNATI
221 Walnut Street
Telephone: MAin 0367

NEW ENGLAND
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120 Boylston St.
SPRINGFIELD
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Highland Station

MEMPHIS
W. F. Shepherd
268 Madison Avenue

CANADIAN DIVISION
Dominion Paper Box Co. Ltd.
469-483 King Street West
Toronto 2, Canada

PACKAGING *Pageant*

1 Miniature showcases do an excellent merchandising job for Millerand, Inc. With a curved window section of rigid transparent acetate in combination with paperboard printed in polka dots, the unit protects the merchandise from consumer handling, dust and dirt, while still permitting visible display and consumer examination. Container made by Sherwood Packages. Transparent acetate sheet material by Plastics Division, Monsanto Chemical Co.

2 Jack Frost, a new soft drink product recently introduced by Confair's Beverage Co., appears on the market in distinctively designed packages. The emblem showing a small figure on skis, fashioned from the letters "J" and "F," serves as a product identification symbol and as the nucleus for product promotion. Note how the clear glass of this circular medallion, embossed in bas-relief near the bottle's shoulder, stands out by contrast with the stippled, pebbled finish of the rest of the container. Labels and closures were designed to provide maximum display. The labels are executed in brilliant colors and closures are spotted with a bright crimson "F" around which is lithographed the flavor name in large letters the same color as the label. Dealers appreciate this packaging feature for it makes it easy for them to pick out the Jack Frost flavor wanted as the bottles stand in the ice cooler. Bottles, closures and labels designed and supplied by Armstrong Cork Co.

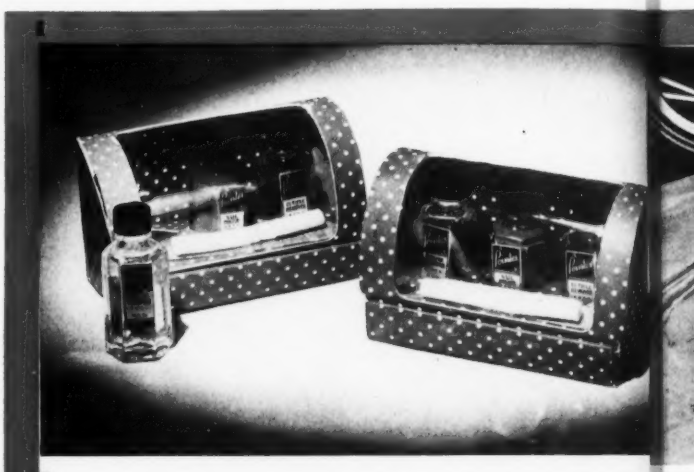
3 Louis Maull Company's meat sauce appears on the market in a stock container of square shape. A three-sided label is utilized, providing ample space for the imprinting of information concerning the new product. A small counter display, executed in colors which match label colors, introduces the new item to the public. Bottle by Hazel-Atlas Glass Co.

4 Premium beer, a new product of the Wacker Brewing Co., is merchandised in a tin container decorated in blue and red. The can is streamlined in appearance and construction, having no side or top seams. The lithographed front face of the can is designed to provide legibility on the grocer's shelf as well as to be thoroughly acceptable on the table in the home. "Crowntainer" by Crown Cork and Seal Co.

5 Recognizing the value of transparent packages for influencing on-the-spot sales, the Pilgrim Chocolate Co. has adopted a new carton which incorporates a large transparent acetate window in its construction. The candies are thus completely protected for top-of-counter selling, yet completely visible for consumer inspection. Carton by Stone & Forsythe Co. Transparent acetate sheet material by Celluloid Corp.

6 Here illustrated are a few of the wide selection of cleverly constructed powder puff packages offered by Parfait Powder Puff Co., Inc. Each of the containers is made of rigid transparent acetate sheeting which lends itself readily to the fabrication of unusual forms—candles, bottles, cartons, bells, drums, etc. Many of the packages feature decoration in the form of plastic handles, ribbons, painted wooden knobs, metal-bound edges or metal lids. The acetate material may be imprinted with one or more colors for product identification or for decorative effects. Transparent acetate sheet material by Eastman Kodak Co.

7 Hobbyists and home craftsmen will welcome this U. S. Plastics Craft Corp. set of cast phenolic plastic materials which may be sawed, drilled or carved into many useful and attractive articles. The various pieces of plastic, tools, patterns and instruction sheets are neatly held in a die-cut platform. The lid of the set-up box bears a photographic illustration calculated to immediately inform the prospective purchaser of the contents within the package. Cast phenolic plastic materials a product of Plastics Division, Monsanto Chemical Co.



8 Forbidden Fruit, a cordial merchandised by Jacquin et Cie, Inc., is bottled in a regal manner. The unusual bottle is topped by a closure in the shape of a crown and the product name is carried on a medallion as well as on a label which encircles the bottle. The entire unit is covered with a transparent acetate container which protects it while on display. Transparent container by Walter P. Miller Co., Inc. Transparent acetate sheet material by Plastics Division, Monsanto Chemical Co.

9 Fink Roselieve Co., Inc., has added another item to its line, the new F-R Cine Action Editor for 16-mm. movie film. The unit is marketed in a folding carton, so designed as to tell a quick story concerning the product. The top panel bears pertinent information so that sales-clerk selection is facilitated when the cartons are stacked on shelves. Cartons by Robert Gair Co., Inc.

10 A complete line of canned foods, sponsored by W. N. Clark Co., has recently made its appearance on the market. The Good Nature label is of a poster type, providing maximum legibility when placed on the grocer's shelf. The natural color process vignettes not only increase the display value of the line, but increase consumer receptivity for the products due to the attractiveness of the illustrations. Labels designed and executed by Stecher-Traung Lithograph Corp.

11 Housewives will appreciate this Pakay Hostess Ensemble. Water-proof mats, coasters, and beverage and dinner napkins are contained in a set-up box simply designed and constructed to hold the various items neatly in place. The box, finished with a coated paper, is equipped with a hinged lid and is designed to serve as a permanent storage place for the items in the ensemble. Box by Nashua Paper Box Co. Coated paper by Nashua Gummed & Coated Paper Co.

12 Dr. West's Vray is a new dentifrice marketed by Weco Products Co. Six ounces of the new product are contained in a bottle which is topped by a lined molded closure. The carton in which the bottle is merchandised is designed to acquaint the public with the new product. A line drawing of the bottle appears on the front panel of the carton, while side panels are devoted to a complete description of the dentifrice. Bottle and closure by Owens-Illinois Glass Co. Carton by American Coating Mills, Inc.

Three of the many sizes of boxes being utilized by Marshall Field & Co. Note the relief effect achieved on the box papers and the varying sizes in which the same design scheme has been reproduced to fit four box size groups.

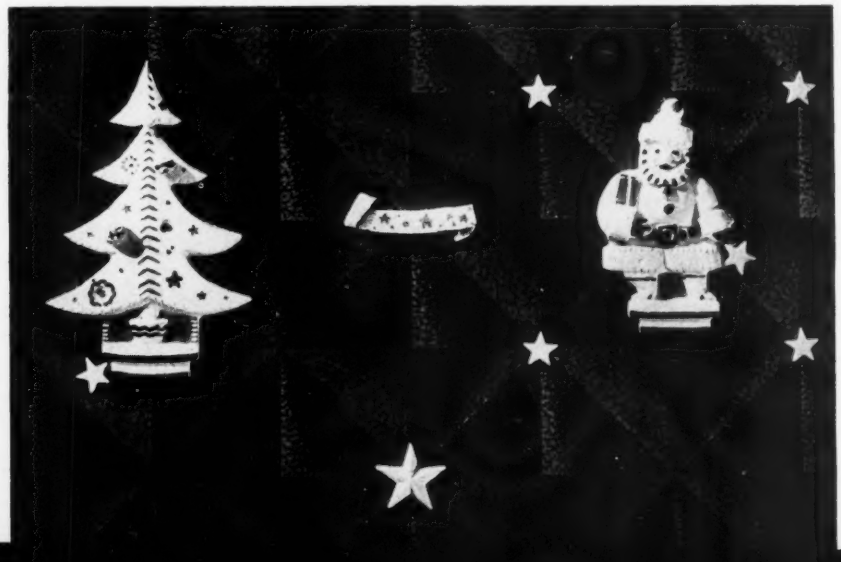
Paper designed with a camera

Christmas shoppers in Chicago's Marshall Field & Co. store will note table decorations in the form of four figurines representing traditional Christmas symbols. In the baked goods department, they will find cookies representing the same symbols and throughout the store, they will see packages upon which these figures stand out in bold relief.

Package papers for Marshall Field's Christmas boxes have been built, not drawn. Designer Lucille Knoche first created four white plaster figures in half relief, placing these on a red and gold paper background. The setup was then photographed with strong shadows so cast as to emphasize the relief effect. Direct color photography was not utilized, both for reasons of economy and because it was felt that this method would not provide sufficient contrast for display purposes. A black and white photograph was utilized, being broken down, by the lithographer, into three separation plates—a gold and red one for the background, a blue one for the figures and shadows.

The design was reproduced in four sizes to keep it in proportion on the various sizes of boxes utilized throughout the store. For the Christmas season, the same figures are being utilized in store displays.

Credit: Papers lithographed by the Gugler Lithographic Co.



Close-up view of a portion of the original Christmas design. Plaster figures were placed upon a background paper and the whole montage photographed under strong light. The shadows emphasize the three-dimensional effect.

A FAMILY PORTRAIT from the Armstrong Album

THIS is one of the many pages from the Armstrong Album of style and sales successes. One of the nation's leading wholesale firms chose Armstrong's Metal Caps for its attractive Modern Juliette cosmetic line. Note how these striking closures faithfully repeat the label design on every one of the packages—maintaining family resemblance and providing instant identity.

Your package, too, can have the full dress touch provided by Armstrong's Caps, spelling profits for you on the dealer's shelf or counter. These caps are available in a wide range of standard designs and colors, or may be lithographed in color with your name or private design.

Protection is another "plus-value" of Armstrong's Metal Caps; they are made of high-grade ductile metal, they grip your jars and bottles tightly, and prevent leakage and evaporation. Yet these caps may be easily removed or replaced by the most delicate of feminine fingers.

Style up *your* line and add dependable protection with Armstrong's Metal Caps. Write today for full information. Armstrong Cork Co., Glass and Closure Division, 916 Arch Street, Lancaster, Pa.

• Armstrong's METAL CAPS •

How to Keep Your Finger... o

In O-I Salespackaging not one but THREE types of men work for you

O-I MARKETING MEN: report just what the final consumer wants in your *Salespackage.*

O-I RESEARCH DESIGNERS: mesh consumer preference with protection in your *Salespackages.*

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..on the Pulse of ALL THREE in *Salespackaging*

YOU'VE got to be something of a *Salespackaging* Solomon. You must quickly detect consumer preference... refrain from relying entirely on your production man's reaction or your cost accountant's reasoning!

Need help? Consider the unique way we function. O-I Marketing Men will ring doorbells, find consumer preference for shape, size and closure of the glass container that will help sell your product faster. O-I Research Men will probe your product's make-up and chemistry. Then, keeping their fingers on the pulse of the facts so revealed, O-I Designers and Production Men will create for you a shelf-dominating *glass salespackage.* It will be complete—container, closure and shipping carton. Of top quality, it will spur sales, smooth and lessen production costs.

From where you're sitting, doesn't it look as if you'd benefit by talking frankly to an O-I representative? Owens-Illinois Glass Company, Toledo, Ohio.

Four *Salespackages* Tuned to the Pulse of All Three

Left to right: O-I "Tumjar"—handsome, convenient, favored by consumers for table use, thus a premium as well as a salespackage. Available in nine sizes to hold from 4⅜ to 15⅛ ounces of food products. O-I Icebox Jar: a splendid "premium" food packer, holds 16½ ounces. O-I Modernistic Jug: Light weight, with large label space, can be had in 8, 12, 16 and 32-ounce capacities. O-I Gallon Jug: for bulk packing of vinegar and juices of all kinds. The closures shown are O-I plain or lithographed metal caps. All containers can be supplied in plain or brand-printed corrugated cartons.

OWENS ILLINOIS

Complete Packaging Service

CONTAINERS • SAFEDGE TUMBLERS • CLOSURES • SHIPPING CARTONS

First in Glass

Summer sales earned in fall

Hoffman Plant Pantry introduces entire line as a unit to garden amateurs

FEED YOUR PLANTS THIS EASY WAY
No Soiled Hands No Waste Odors Well Locked In
Preserve this PLANT PANTRY to store Hoffmans' Cut and Pour-Re-seal Packages.
Get Re-fill Packages from Your Dealer as Needed
PLANT FOOD
PULVERIZED TOBACCO
PEAT MOSS
BONE MEAL
COW MANURE
LIME
LAWN GARDEN PLANT
SHEEP MANURE

One of the most package conscious of corporations is the firm of A. H. Hoffman, Inc., and with good reason, for it operates in a field where packaging was formerly virtually unused or used in its crudest forms. Moreover, the nature of its product is such as to present technical packaging problems far more difficult than those which have to be met by most other manufacturers. Yet, through its packaging executive, John A. Farmer, it has succeeded in solving—not only for itself, but for its entire industry—many of the most difficult problems of shipment, odor elimination, siftproofing and unit packaging. By solving these problems, the company has placed itself in a position to capitalize upon the merchandising advantages offered it by the packaging-problem solutions it has developed.

This process has been virtually reversed now in the development of a Plant Pantry, a new combination package conceived with a merchandising problem in mind, the solution of which demanded the solution of a number of technical problems as well.

The merchandising purpose was to introduce to the uninitiated consumer a group of seven plant products plus a sample of another company's product, the entire set being designed to encourage the amateur gardener to feed indoor plants properly during winter months. It is hoped that, through the distribution of these packages, very substantial sales will be built for larger packages when the spring gardening season rolls around.

The products in the Plant Pantry are packed in the company's patented "Cut and Pour" re-seal bags. These bags have now been placed in a decorated corrugated container so designed as to facilitate neat storage and easy carrying of the entire set from point to point. Interior platforms and dividers hold various bags neatly in place. Metal edge stays, at all four corners at the base of the box, make for a neat, sturdy and economical container. The lid is constructed as a separate section for a number of reasons. First, this separate construction permits the metal edge stay applying machine to seal the rear corners of the box base while equipped with a standard short anvil. Secondly, the silkscreen decoration and direction imprint on the box cover can be more easily applied than would have been possible on a larger box blank. Third, it has been found possible to securely lock the cover and base together by means of a third corrugated piece which forms a convenient carrying handle.

Credit: Corrugated container by the National Metal Edge Box Co. Art work and silkscreening by the Jay Advertising Co.

Carding at High Speed for Economical Mass Production

In attaching small items to cards for point-of-sale display—and so making a packaging unit capable of "selling itself"—speed is often the all-important factor bearing on costs. Stapling machines, operated by hand, foot treadle or electric motor, are therefore tending to replace slower fastening methods, taping, gluing, hinging, sewing, etc., which involve the use of cumbersome materials and time-consuming manual operations. The stapling machine clicks out the staples as fast as the operator can handle the work; every click completes a stapling operation, while often a remarkably small number of stapling operations will do the entire carding job.

Whether on a large or a small scale, stapling is faster. Stapling these bass baits to a single display card made this effective packaging unit practical from a cost standpoint.

Heavy Wrenches . . . Fragile Vials of Glass Accurately Carded by Stapling Method

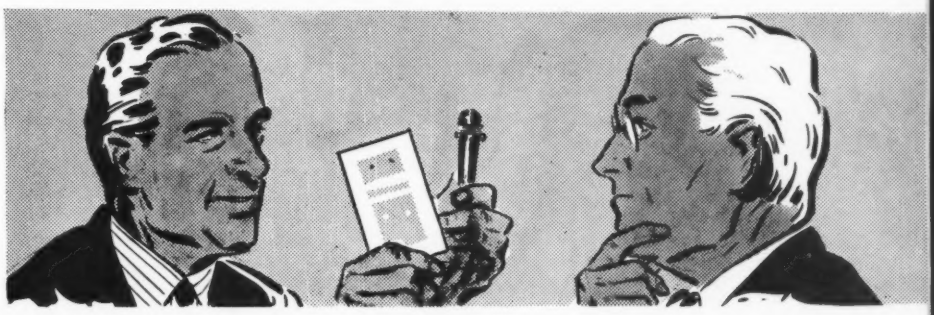
Practically any item that can be embraced by a staple can be carded by a Bostitch stapling machine. Heavy objects can be made secure; the staple holds regardless of temperature or moisture. Delicate objects are safe from breakage, for the pressure of the machine is controlled without variation, the staple clinched without appreciable contact.

The wide variety of carding jobs that stapling can do is further extended by adapting to unusual fastening problems the 782 Bostitch machines now available. Eighteen research engineers, and over 300 representatives, specializing exclusively on fastening problems, help Bostitch customers to choose the right machine for the job . . . and to progress economically from smallest to largest machines through liberal trade-in, rental or budget plans. For further information write to Bostitch, 56 Division Street, East Greenwich, R. I.

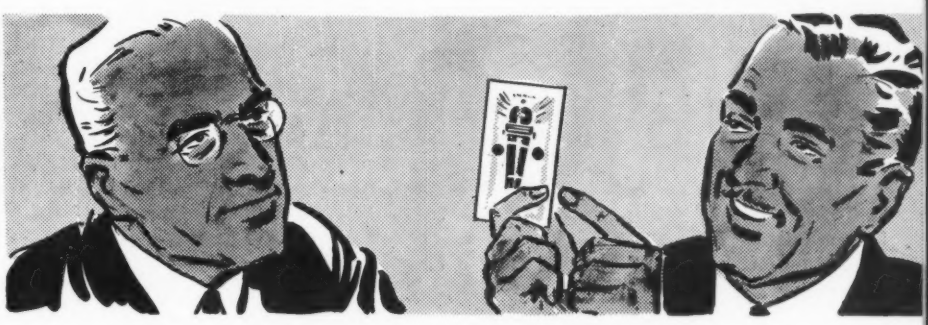
Advertisement

"WE THOUGHT IT COULDN'T BE DONE

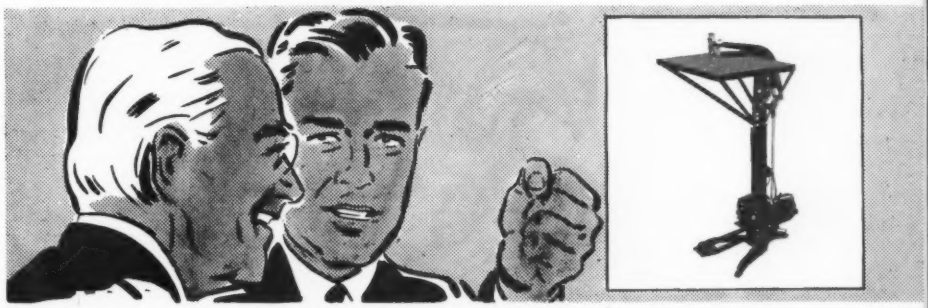
But BOSTITCH Stapling Does Give Us Sales Appeal, Protection and Economy, Too"



"SALES APPEAL is something you can't afford to sacrifice," said the Advertising Manager. "Don't forget that, if you're thinking of changing our carding method." *But Bostitch stapling proved to be neater and unobtrusive, leaving more space for our selling message.*



"PROTECTION is also important," said the Sales Manager, "remember that any new carding method must hold tight against rough handling and theft. *But staples did hold tight, in the samples we tested, much better than our previous fastening.*



"ECONOMY is what I'm after," said the Purchasing Agent. "The whole question of cost will have to be carefully considered." *But the extra speed (with whole operations saved), plus liberal trade-in, rental and budget policies, made those easy-to-operate Bostitch machines more economical than other fastening methods we considered.* So—if you fasten with *glue, tape, tacks, sewing, or any other method...*

...SEE IF YOUR FASTENING METHOD GIVES YOU "ALL THREE". SEND FOR THIS FREE FOLDER — TODAY!

BOSTITCH 56 Division St., East Greenwich, R. I.
or Bostitch - Canada, Ltd., Montreal

New celery preserving technique

Celery dealers have long been troubled by product deterioration, evidenced in a withering of the leaves and a drying out and softening of the stalks. Seeking to eliminate this difficulty, a new container has recently been developed, by a firm known as Pliofilm-Pak Cooperators, and is being distributed in the Chicago area through Atlantic & Pacific, Jewelfood, "Stop and Shop" and Hillman's food stores. The container is also being introduced in Detroit and Cleveland.

The new package is made in the form of a flat envelope, approximately 5 in. wide and 11½ in. long, with one longitudinal heat-seal seam and one end closed also by heat seal. Its application to the product is simple, a manually-operated bagger being utilized. This consists of a cylindrical metal band from which projects a cone-shaped framework of flexible wire arms. Trimmed and washed bunches of first-quality celery are inserted in the cylindrical opening at the large end of the cone-shaped bagger. The bag is slipped over the apex of the wire cone and thus expanded to full dimensions. The celery bunch is then pushed through the wire cone and comes out at the other end neatly positioned in the bag. A rubber band is stretched around the package just below the leaves of the celery which are not covered and the packaging operation is thus completed.

The new container, it is claimed, retains the moisture contained in the stalks, but, at the same time, does not interfere with the "breathing" of the leaves. In market tests, through recent months, the package is reported to have demonstrated its ability to keep celery fresh and crisp for weeks longer than when unpackaged in refrigerator temperatures of 35 to 40 deg. On the counters of the retail grocer, preservation lasts for several days longer than would be the case with the unpackaged variety.

The bags are printed in two colors over a clear transparent material. They may be utilized as a refrigerator food saver, by the consumer, after the original contents have been removed. The entire increase of cost through application of the new package, including bag cost, additional handling, trimming, etc., is estimated to average between 2½ to 3 cents per package, as against the untrimmed "standard" celery. This differential has been obtained in quality markets.

Credit: Envelope manufactured by Neostyle, Inc. Transparent rubber hydrochloride material, Pliofilm, by The Goodyear Tire & Rubber Co., Inc.

1

2

3

1. The bagged celery makes an attractive display in the retail store **2.** The bagging "machine" is a simple device designed to spread the bag while the celery is inserted. **3.** As the product comes through the wire cone, an operator "seals" the container by means of a rubber band. The leaves remain free of the package.

Announcing

COLORFUL PLASTIC SPRAYERS *by* FEDERAL

Federal "closures with a function" offer new broad sales appeal with this fresh, exciting application of colorful Tenite II as a sprayer for liquids.

If your product is a window cleaner, moth killer or something along these lines—perhaps a hand lotion or hair tonic, you will find these bright sprayers a real aid to sales. They can be manufactured with a spray or dispensing tip, and can be used in many liquids which cause corrosion of metal sprayers or dispensers.

Consumers have proved their preference for Federal sprayers on many leading national items and now, unlimited color possibilities and the sales appeal of plastics are added to the functional utility of the sprayer.

This means added sales stimulus and consistent re-use of your product, as the plastic sprayer is so appealing and beautiful the average consumer will keep it indefinitely.

We have installed a complete automatic plastic molding department to insure our customers of quick production on this, and other new plastic additions to our line. Write for samples and information on this outstanding new Federal closure.

FEDERAL TOOL CORPORATION

CLOSURES WITH A FUNCTION

400 NORTH LEAVITT STREET . . . . . CHICAGO

The cologne bottle is of white opaque glass with a scattered pattern of small moss roses supplying an added note of luxury to the tear-shaped container. The octagonal-shaped bottle for bath oil is topped by a closure which simulates a moss rose. The dusting powder box likewise incorporates the rosebud motif in its design, the scroll edge of the cover and the base being finished in pink.

Victorian for worried moderns

Cosmetics continue to follow fashion in a trend away from modern severity and simplicity

Designer Laurence J. Colwell, in seeking a design motif for the new cosmetic line of Charles of the Ritz, selected the lush period of the Victorian era to bring out the character of the line. It was the designer's belief that women today—in view of the world situation—prefer designs which are exquisitely dainty and feminine. Thus the Victorian design influence was utilized, just as it frequently has been adopted in the past whenever a reaction has occurred against severe simplicity. Yet despite the antique motif, modern materials have been utilized. For instance, the cream rouge jar has been molded of a white plastics material with a dull, ribbed finish. Realistic and colorful rosebuds decorate the unit's top and base.

The entire line is done in a moss rose pink and green with white serving as the background. On many of the packages, the shading is done very softly, suggesting a blending of pink tones. Pink and white stripes and a scattered pattern of small moss roses comprise the predominating design motif.

The bottles, in the cosmetics family, are all opaque with an overlay painted motif to increase richness of

White molded plastics decorated with rosebuds are utilized for this jar. An interior glass container holds the product.

X VOTE FOR BETTER SERVICE .... AND BETTER QUALITY

Scores of can buyers are turning to Crown for prompt, dependable service on metal containers.

These users find that not only does Crown offer excellent service but a particularly gratifying standard of quality as well. Sturdy construction, handsome lithography and expert assistance by can designers.

In short, your container requirements will be handled to your entire satisfaction at Crown. It will pay you to investigate.

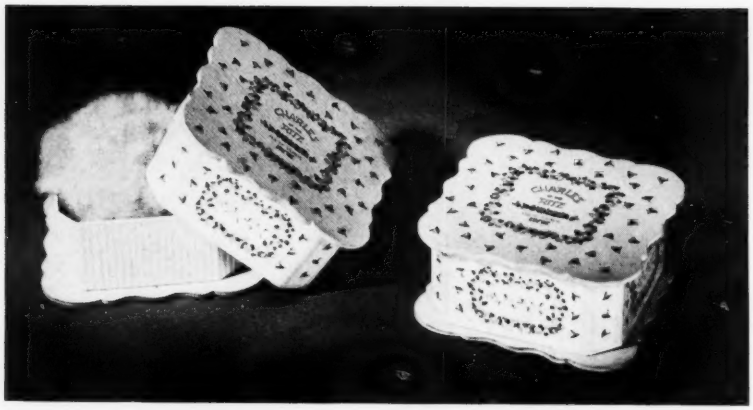
CROWN CAN COMPANY, PHILADELPHIA, PA.

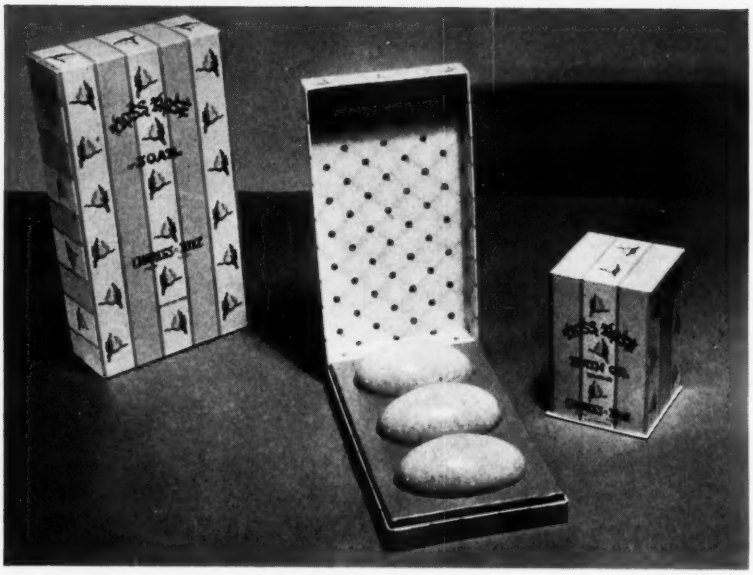
Division of Crown Cork and Seal Company

BALTIMORE ST. LOUIS HOUSTON MADISON ORLANDO
FORT WAYNE NEBRASKA CITY

CROWN CAN

INDEPENDENT AND HELPFUL





Above: The cover of the powder box repeats the design of the dusting powder container. The base of the unit, however, is executed in fine pink stripes. Below: Cakes of soap are wrapped in cellophane with a lace pattern. The hinged lid reveals the soap set in a die-cut platform. The interior surface of the lid is lined with an embossed paper to achieve a quilted effect.

appearance. The cologne and scented balm containers are in twin tall milky-white tear-shaped bottles, sprinkled with a tiny moss rose design. The labels are set in a pattern simulating a garland of little rosebuds.

The bath oil is contained in an octagonal-shaped bottle with a deep green color overlaying its glass base. Edging the lower portion of the base is the legend "Moss Rose bath oil" in a pink and white script and encircling the container is a design depicting a wreath of full blown pink roses. The stopper simulates a large moss rosebud. Lifelike in appearance, it is made of plaster and is hand tinted.

The boxes and folding cartons in the line are in a true Victorian decor, pink and white stripes with the moss rose pattern scattered over the white being the outstanding means by which the designer has achieved a rich appearance. Set-up boxes are finished in a white paper with an embossed moire pattern. The folding cartons are finished in plain white paper and then are wrapped in transparent cellophane with a moire all-over pattern.

The dusting powder box is executed in two colors, pink and green, and the scattered rosebud design is effectively utilized. The Victorian scroll edge on the cover and base is finished in pink. The cover of the powder box duplicates the design of the dusting powder box. The base of this container, however, is finished in fine pink candy stripes.

The soap container repeats the striped and rose effect of the other boxes. When opened, the box reveals three cakes of soap—overwrapped in a lace patterned cellophane—resting on a green die-cut platform.

Credit: Molded plastic cream rouge container by General Electric Co., Plastics Division. Interior glass container by United States Glass Co. Bottles by Carr-Lowrey Glass Co. Bottle and stopper decorations by Plastiglas Printing, Inc. Cologne and scented balm closures by Carr-Lowrey Glass Co. Bath oil closure by John Praetorius. Folding cartons by E. J. Trum, Inc. Set-up boxes and face powder container by Karl Voss Corp. Dusting powder box by E. N. Rowell Co., Inc. Soap wrappers by Nashua Gummed and Coated Paper Co. Moire embossed paper by Louis Dejonge & Co.

SHIPPING TRAGEDY NO. 10

Mr. G. was interested in packaging costs (as who isn't?).

He shot the works on new cartons for his line, and paid

for unusual strength So, when he came to buy his shipping

containers he thought he could safely cut down **their**

strength and save a pretty penny But alas for Mr. G.!

Concealed Damage made his line look like this

his dealers look like this and his customers look the

other way!

INSIDE STORY . . .

"has done more to stimulate intelligent thinking among container users than any other work I can mention."
— A. W. Luhrs,
Container Testing Laboratories

"unique in its frankness and completeness"
— Shears

There must be a proper balance of strength factors between the carton and the shipping container to secure maximum protection and maximum economy. Container Corporation can help select the correct team of carton and container—and control manufacturing specifications for uniformity. Clip this coupon for the INSIDE STORY of Concora CERTIFIED FABRICATION as it applies to shipping cases.

CONTAINER CORPORATION OF AMERICA
111 W. Washington St., Chicago, Ill. *Dept. MP-11*

Please send me your publication, "*Inside Story*," which explains the method of *Certified Fabrication*.

*Name*_____ *Position*_____

*Company*_____ *Address*_____

CONTAINER CORPORATION OF AMERICA

GENERAL OFFICES: 111 WEST WASHINGTON STREET, CHICAGO, ILLINOIS

NEW YORK • ROCHESTER • PHILADELPHIA • PITTSBURGH • AKRON • CINCINNATI • CLEVELAND • DETROIT • PEORIA
ROCK ISLAND • FORT WORTH • MINNEAPOLIS • ST. LOUIS • INDIANAPOLIS • WABASH • ANDERSON IND. • NATICK, MASS.

MERCHANDISING RUBBER SUNDRIES: REDESIGN SUCCESS STORY

In recent months, sales of Davol Rubber Company's water bottles, fountain syringes and combination syringes have upped sharply due, in part, to the appearance of a new package with greatly increased counter appeal. The old type picture-frame construction of platform window, so common in boxes for this kind of merchandise, has been discarded by the company and a new window platform, without overhanging walls, hinged at the top and with convenient pull tab to open if desired, has been substituted. The new package may be seen to the right in the illustration.

Application has been made for a patent to cover this new overall window type of box which has accomplished the elimination of masking by lowering the side walls of the frame supporting the transparent acetate sheet, allowing it to curve naturally at the sides. The immediate effect is a clearer vision of the contents, the elimination of shadows and a more graceful general appearance. A happy result is the lessening of torsion from side to side which, in turn, eliminates undue strain on the transparent acetate sheet and helps to prevent the possible splitting of the acetate material. It is a simple matter to pull up on the tab and open the window to examine the contents more closely.

Each of the different families of Davol water bottles, fountain syringes and combination syringes, packed in the new window boxes, is distinguished by different color combinations. The Relief line, one unit of which is here illustrated, is packed in boxes of two tones of blue, providing a pleasing contrast with items in the general line packed in orange and blue boxes.

DESIGN HISTORIES

YOU CAN'T LOSE THE LIDS OF THESE NEW HOSIERY BOXES

"Sell the Sapphire box and it will sell stockings for you" is the message the Sapphire Hosiery Corp. imparts to its retailers. This company has given serious consideration to its stocking boxes, in an effort to create packages which would be different from all other hosiery containers on the market. The box, as finally designed, is just half the length, the same width and approximately twice the depth of the average stocking container. It is equipped with a hinged lid.

Each individual pair of hose is packaged in a cellophane envelope presenting a white opaque face with a window in clear cellophane.

A small display mannequin, standing on a replica of the blue and white Sapphire box, is utilized to present the hose on the store counter.

Credit: Box by Imperial Box Co. Box wrap by Consolidated Lithographing Corp. Cellophane by E. I. du Pont de Nemours & Co., Inc. Hosiery envelopes by U. S. Envelope Co. Display piece by Margit Nilsen Studios.

Put New Punch in Your Sales with Heekin Colors on Heekin Lithographed Cans

HAS your package the "socko" that puts the punch into sales? When colors are lithographed on metal for metal packages, they should stand out and do a sales job . . . attracting attention on every counter . . . on every shelf . . . wherever they are displayed. Heekin Lithographed Cans are found in every industry where metal packages are used . . . and though they cost no more than ordinary lithographed tin cans, you'll like their strong, lasting colors . . . colors that attract the eye . . . colors that sell.

THE HEEKIN CAN CO., CINCINNATI, O.

heekin cans

Lithographed

WITH HARMONIZED COLORS

GETTING ADDED COLOR WITHOUT ADDED EXPENSE

Distinctively designed cans are now being introduced by the Christian Feigenspan Brewing Co., brewers of Feigenspan P.O.N. ale and beer. Conceived by designer Thomas D'Addario, who also originated the company's bottles, these new metal containers were so planned as to tie-in with the other packages in the line, thus maintaining a family relationship. The lithographed label—of oval horizontal type—appearing on the front face of the can, is similar in appearance to the paper label utilized on the beverage bottles.

An outstanding feature of the containers is the clever use of color. The color of the metal can itself has been incorporated in the design to give an additional color without additional printing expense. Thus in the case of Feigenspan XXX amber ale cans, the silver metal has been employed in the design to blend with the rich green background and the attractive color scheme of green, white, gold and red. The light beer can design is gold, buff, red and brown, with a bright gold background which tends to suggest the qua'ity of the brew itself. As in the case of the ale can, the designer has employed a bright red bulls-eye to spotlight the P.O.N. name. The can label design is legible and attractive and is clearly recognizable as an individual member of the Feigenspan family.

Credit: Cans supplied by American Can Co.

DESIGN HISTORIES

CUT YOURSELF A BAND SAW WITHOUT ANY MUSS OR FUSS

Departing from the cardboard box formerly utilized for the merchandising of its band saws, The Doall Co. has now created a new and improved container made of metal. The lithographed metal box—on which patents are pending—is much more rigid and durable than the cardboard box which the company originally developed for packaging narrow band saws. The unit is designed so that by holding it in one hand, the saw can be pulled out with the other hand in the same manner as a tape measure is drawn out. When the desired length is pulled out, it is snipped off, ready to weld into a band. Each box contains 100 ft. of saw and there is a "window" which shows how many feet of saw remain in the box.

The containers may be stacked on a shelf bookwise, facilitating selection of different band saw types. A label on the outside edge gives complete specifications of the saw. This label is executed in three different colors to identify the three different sets so that the operator can reach quickly for the correct box.

CUSTOM LAMINATING SERVICE & SOURCE FOR QUALITY BOARDS

Our complete line of folding box and set-up box boards has been acknowledged for years as the tops in quality.

AND NOW, SPECIAL SURFACES

Our service has been extended to include the lamination of all special surfaces to our (or your own) boards or papers. Glassine, Parchment, Foils, Litho, Book, Cloth, etc., will be applied to your specifications to any type of board or paper. The possibilities are limitless.

We offer a complete service for the boards of all standard and special packages and displays.

HOW IT WORKS

You select a board (either from our or any other stock you wish) and we'll laminate it with any special surface you desire and rewind or sheet to your specifications. We'll supply all the materials or part of them or do the laminating only. Definite economies in both packaging and display creation.

JAYPACO

SEND ME INFORMATION OF YOUR UNIQUE SERVICE WITHOUT OBLIGATION

NAME .....

STREET ..... STATE .....

CITY ..... POSITION .....

FIRM NAME .....

This post card printed on our .020 JAYPACO Folding Carton Board. Laminated with a High Finish Litho Paper. Looks good, yet inexpensive. Investigate for yourself.

MAIL NOW

Note: Detach before mailing card.

TEST STUB for TEAR - STRENGTH - DURABILITY

JAYPACO

CUSTOM LAMINATING DEPT. • JOE SALWEN PAPER COMPANY

405 EAST 4TH STREET • NEW YORK, N. Y • PHONE: ORCHARD 4-0300

NOVELTY TOY CONTAINERS WIN DISPLAY AND RE-SALES

The cookie and cracker industry is dominated by a few large firms whose manufacturing, distribution and advertising facilities have given them nation-wide distribution and a nation-wide consumer demand. Smaller firms have found it increasingly difficult to work against this sort of competition when utilizing more or less standardized types of packages. Given two products in seemingly identical packages, the consumer has shown a tendency to pick the nationally advertised product. Some manufacturers have sought the easy way out through price cutting, but this, in turn, has brought on its own evils in reducing profit margins. The. B. & D. Package Co. has therefore sought to avoid underselling or premium distribution and to gain consumer interest, at standard prices, by converting its containers into eye-appealing premiums.

The new containers are of simple folding carton structure, easily assembled and easily opened. They are so cut and so decorated as to form reproductions of attractive little toys—ships, buses, trucks, etc. These forms lend themselves to display and, it is reported, that dealers more willingly display these packages than

they do the ordinary containers of unadvertised brands. Consumer appeal—particularly appeal to children—has been found to be substantially increased by the containers and the company anticipates a tendency to re-purchase and to specify the particular brand it manufactures in an attempt—by consumers—to secure a collection of these toy packages.

Despite the variety of forms which the packages assume, they are all of essentially the same structure.

Credit: Cartons designed by Robert Gair Co., Inc. and made by Eastern States Cartons Division.

DESIGN HISTORIES

MAKING THE BACK LABEL DO A SELLING JOB

At the 1940 Packaging Show, C. W. Browne of the U. S. Printing & Lithograph Co. discussed "The Package: A Vehicle for Consumer Messages." In this speech, Mr. Browne explained how canners were utilizing the reverse side of can labels, employing them to carry recipes, consumer information, etc. Although this discussion of canned goods labels was far removed from fishing line packages, it provided the key to the redesign project undertaken by the South Bend Bait Co. This company had been merchandising hundreds of thousands of fishing line spools, each spool equipped with a label which carried only the company and product names. It occurred to members of the organization that tactics similar to those used by the canners could be employed on the reverse of line spool labels, i.e., redesigning back labels so that each might carry a definite message to the fisherman and exploit some particular item of fishing tackle definitely related to the fishing line.

As finally executed, the labels accomplish the desired purposes. In the illustration, top left, may be seen the old front label as compared with the new, seen at the top right. The new seal exploits the South Bend Bait Company's most popular reel and, at the same time carries the identification of the company. The three labels seen in the lower portion of the illustration are several redesigned back seals being used on various lines to promote the South Bend lures. All of the new labels are embossed and are executed in bright colors. Pictorial presentations acquaint the fisherman with the actual appearance of lures, reels or lines.

Credit: Embossed labels by Cameo Die & Label Co.

Plenty of Pails

PLENTY OF USES,

PLENTY OF SIZES, PLENTY OF PROFITS.

Now there are seven H-A pails available to fill the needs of packers everywhere. Daily new uses are found for this family of seven H-A pails. Strong, light in weight, with ample label space and attractively and efficiently designed, their shelf-consciousness keeps them moving. Every pail is available with a real utility handle which makes its re-use value an added attraction. These seven pails are available in the No. 5 and No. 10 sizes, gallon and half gallon sizes, 28¾ ounces, 48 ounces and 115 ounces.

Use H-A pails for sales and good-will. Use H-A pails for profits. Write for samples and information today.

HAZEL-ATLAS GLASS COMPANY WHEELING, W. VA.

FILING FILES FOR FREQUENT REFERENCE

The standard container for small files has consisted of a pasteboard set-up box with individual files wrapped in paper. While the package afforded ample protection for the product, it presented problems for both the dealer and the consumer in that it made recognition of the individual files difficult and required unwrapping to permit consumers to discover the exact file they desired. The container likewise was lacking in re-use and storage value for the consumer.

Henry Disston & Sons, Inc. have sought to overcome these difficulties and have adopted, therefore, a transparent acetate vial. A pleated sheet of opaque acetate material is set into this vial to form a series of protective nests into which the individual files are set. Thus each file is adequately protected and isolated from the others, while all are visible to the consumer. The vials are capped with a single shell threaded metal closure and are decorated with the Disston label. The container is light in weight and compact and is reported, by the company, to have achieved an enviable sales record in the short time in which it has been used.

Credit: Vials by Lusteroid Container Co., Inc.

DESIGN HISTORIES

SET-UP DISPLAY BOXES USE ACETATE INNER LIDS

Fishing line manufacturers have been among the most progressive in developing new forms of set-up paper box containers to carry, stock and display their products. One of the most interesting of these has recently been created for the Ashaway Line & Twine Mfg. Co. and utilizes a combination of set-up box and transparent acetate construction.

The base of the container is a standard set-up tray lined and covered with a pebble grain foil. Telescoping into this tray is a transparent acetate hood which permits the consumer a close view of the line spools set within. At the same time, the hood protects the product from dirt and excessive handling. Set above this, to afford protection in shipping and to permit stacking on stock shelves, is a black flint covered set-up cover. The unique feature of the container is the manner in which this cover has been cut away to achieve two ends. When in position on the container, the cover affords substantial visibility for the product. When, however, the unit is to be displayed in show cases or window, the cut-away cover forms an easel which permits the product, as set in its base and covered by its transparent hood, to be shown at an ideal angle.

The containers have been developed in three sizes to hold two, four and six spools of line, respectively. The basic construction does not vary from size to size.

Credit: Boxes manufactured by the Taylor Box Co. Foil paper by Hampden Glazed Paper & Card Co. Flint paper by Metz Paper Co. Transparent acetate sheet material by E. I. du Pont de Nemours & Co., Inc.

From this

Comes this

Design is only half the answer to your packaging problem. Of equal importance to the success of the product is the package itself. Constant research on papers, paper coatings, Cellophane, Pliofilm, and other material factors enables us to *know* the perfect package for your use.

Continual scientific laboratory tests are absolute assurance that any Royal package is the right one for the purpose intended.

If you have any question regarding your package in relation to your product, let us help you, both in research and design.

Write for further information

THOMAS M ROYAL & COMPANY

PHILADELPHIA U S A

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Coffee and tea packaging

Honors are awarded coffee, tea and spice packages in the fourth annual packaging show conducted by "The Spice Mill"

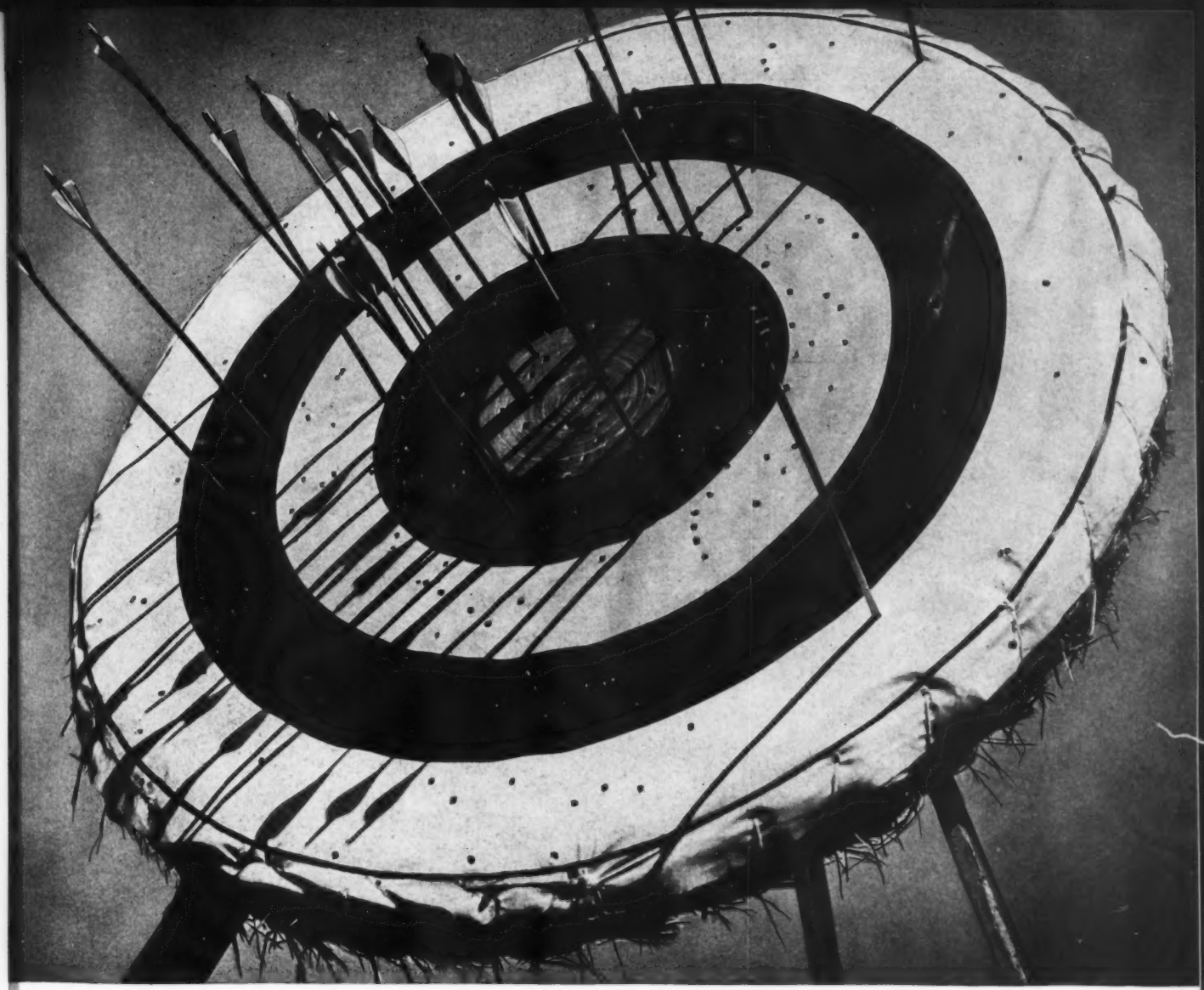
"The Spice Mill," journal of the coffee and tea trades, recently conducted its fourth annual packaging show. Fifteen blue ribbons and three brown ribbons were awarded in various classifications—bags, cans, cartons, glass containers, display boxes and combination groups, representing the year's outstanding developments in the packaging of coffee, tea, spices and flavoring extracts. The winning packages were on exhibit at White Sulphur Springs, W. Va., during the convention of the National Coffee Assn.

Three judges made the awards: Georges Wilmet, president of the firm of industrial designers, de Vaulchier, Blow & Wilmet, Inc.; Edith M. Barber, food editor of the New York Sun and Bell Syndicate and author of "Edith Barber's Cook Book" and Felix Sang, specialist in merchandising with the Egmont Arens organization. Choices in all classifications were made primarily on the basis of consumer appeal.

Three blue ribbon awards were made in the bag classification. The Independent Grocers' Alliance Distributing Company's Sunny Morn coffee bag was first choice. This bag design features a bright yellow circle—simulating the sun—set against a maroon background. The side panels of the bag bear a set of rules for the guidance of the housewife in using various coffee grinds and appliances, the messages being imprinted in white letters.

The Royal Guest coffee bag was awarded a blue ribbon for quality appearance. The background is a rich purple against which is placed an IGA (Independent Grocers' Alliance) crest in turquoise blue set in an elaborate gold framework.

The third award in the bag classification—a blue ribbon for the best bag printed in one color—went to National Co-Operatives, Inc., for their bright red Co-Op coffee bag. The well-balanced design, featuring only the brand name in bold red letters against a white band, makes the bag noteworthy for its simplicity. On one side of the bag is printed a brief message on the importance of freshness in coffee, on the other side the company's crest is reproduced. This red Co-Op bag, together with two others of identical design printed in blue and a blue-purple, was also honored for the best family group of bags.



EXPERIENCE *vs.* TARGET PRACTICE!

EXPERIENCE has trained "NATIONAL" eyes and hands to *bunch their hits* around Container style . . to perfect their aim on Sales-by-the-Package. ★ EXPERIENCE replaces target practice in the "NATIONAL" way of practical designing, introducing novel display features and turning out a superior craftsmanship. ★ "NATIONAL" Container Service joins smart ideas with Experience in Packaging to speed Sales. "NATIONAL" EXPERIENCE *replaces* TARGET PRACTICE!

NATIONAL CAN CORPORATION

EXECUTIVE OFFICES: • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MASPETH, N. Y. • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO

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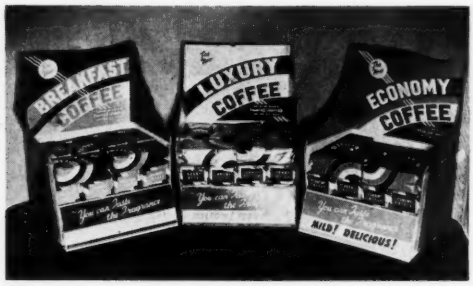

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Judged the best vacuum can in the show and awarded a blue ribbon in that classification was the S & F brand coffee container entered by Smart & Final Co., Ltd. This can has a distinctive color scheme—red bands with white lettering set against a dull gold background. Informative merchandising messages are printed on the sides and top of the container. Another blue ribbon in the vacuum can classification went to the McGarvey Coffee Co. for the quality appeal in its Flame Room coffee can.

The judges awarded a blue ribbon to the Dwinell-Wright Co. for the effective redesign job performed on its White House coffee carton. As will be noted in illustration No. 6, the new design (see at the right) preserves the identifying characteristics of the old package. The white band at the top of the original package has been eliminated, making the carton appear somewhat taller.

Chosen for a blue ribbon award as the best carton in the show was the Golden Rose tea package entered by First National Stores, Inc. The package features a simplified yellow rose set *(Continued on page 94)*

1. Best bag, Independent Grocers' Alliance. Bag by American Bag & Paper Co. Designed by Egmont Arens. **2.** Best vacuum can, Smart & Final Co., Ltd. Can by American Can Co. Designed by W. E. Close. **3.** Best carton, First National Stores, Inc. Carton by Robertson Paper Box Co. **4.** Best transparent wrap, Dannemiller Coffee Co. Bag by Continental Bag Specialties Corp. **5.** Best one-color container and winner in the family group, National Co-operatives, Inc. Bags by Benj. C. Betner Co. **6.** Redesign, Dwinell-Wright Co. Carton by Robert Gair Co., Inc. Designed by Jim Nash. **7.** Quality appeal, Flame Room coffee, McGarvey Coffee Co. Can by Continental Can Co., Inc. **8.** Best spice can, McCormick & Co. Can by American Can Co. **9.** Quality appeal, Royal Guest coffee, Independent Grocers' Alliance. Bag by American Bag & Paper Co. Designed by Egmont Arens. **10.** Quality appeal, King Alfred tea, Hart Food Stores, Inc. Carton by Reynolds Metals Co., Inc. **11.** Best envelope, John Sexton & Co. Envelope by Benj. C. Betner Co. **12.** Best combination shipping-display container, Francis H. Leggett & Co. Cartons by Hinde & Dauch Paper Co. Bags by Continental Bag Specialties Corp. **13.** Best family group of cans, McCormick & Co. Cans by American Can Co. **14.** Bag and dispensing rack, Thomas Coffee Co. Flav-O-Tainer bags by Thomas M. Royal & Co. Pliofilm material by Goodyear Tire & Rubber Co. Rack by E. H. Titchener & Co. **15.** Brown ribbon winner for visibility, Richmond Tea, First National Stores, Inc. Carton by Robertson Paper Box Co. **16.** Brown ribbon winner for re-use value, Smart & Final Co., Ltd. Glass container by Hazel-Atlas Glass Co. **17.** Brown ribbon winner for product identification, family group, Familex Products Co. of Canada. Cans by American Can Co. of Canada, Ltd. Designed by Raoul Bonin.

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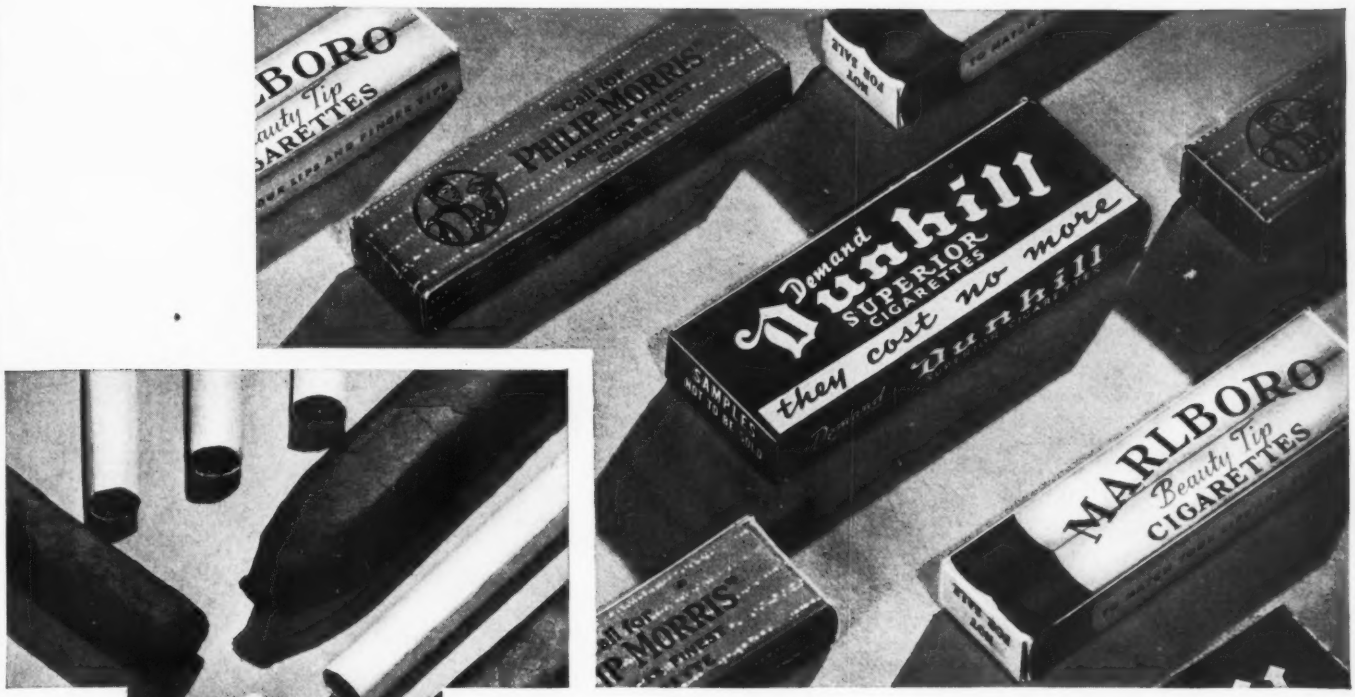
INDUSTRIES THAT PROFIT FROM Ridgelo SERVICE...

Ridgelo CLAY COATED
REG. U. S. PAT. OFF.



tobacco

● Everyone knows that smooth Ridgelo clay coated boxboard is specified for gay Christmas cartons for cigars, cigarettes and pipe tobacco.

But perhaps it isn't realized that the less spectacular packaging demands of this industry are also met with Ridgelo clay coated . . . samplers for cigarettes are shown here. Tube and slide cartons for cigars and dummy cigar boxes are other common uses.

These people prefer clay coated to the point of specifying it . . . because of better printing results, more life and snap to the boxes, smoother surfaces, more resistance to soiling. They are getting cartons with the same high standard set by their other packages. No manufacturer should pay for beautiful labels and wraps and then use shabby cartons. It pays to remember . . . that good designs deserve Ridgelo clay coated . . . all others need it. Ask for samples and compare!

Ridgelo CLAY COATED
REG. U. S. PAT. OFF.
BOXBOARDS • CARDBOARDS
MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

Representatives: E. C. Collins, Baltimore • Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia

Transparent packaging for toiletries

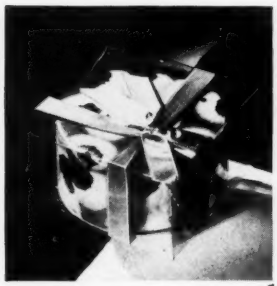
by FELIX LÉVY-HAWES*

The transparent rigid container is no longer considered a miracle. It is today accepted as a legitimate well-established sales tool which has bestowed its charm on the 10-cent powder puff as well as on the fine wool blanket that retails for $100.00. Between these extremes in price range, its versatility is almost unbounded. Without infringing upon the functions of older types of containers, it has provided new means for achieving various merchandising aims.

It has been used to advantage for introducing new items in combination deals when such widely opposite designs as shaving brush and cream are united, or razor and soap or infants' wear and toys. It goes without saying that it is an ideal material for special promotions.

Transparent acetate enhances the beauty of fine products, without concealing famed established characteristics which are recognized by the buying public. For these and many other reasons, the material and the package made of it have achieved perhaps their widest acceptance in the cosmetic industry. While success resulting from the use of transparent rigid containers can be found in every field of American manufacturing, the writer's own experience has been principally in the cosmetic field and I propose, therefore, to cite a number of case histories which may give other manufacturers an idea of the variety of ways in which the cosmetic industry has utilized, and is utilizing, transparent rigid materials as a means of solving varied merchandising problems.

* Vice president, Hygienol Co., Inc.



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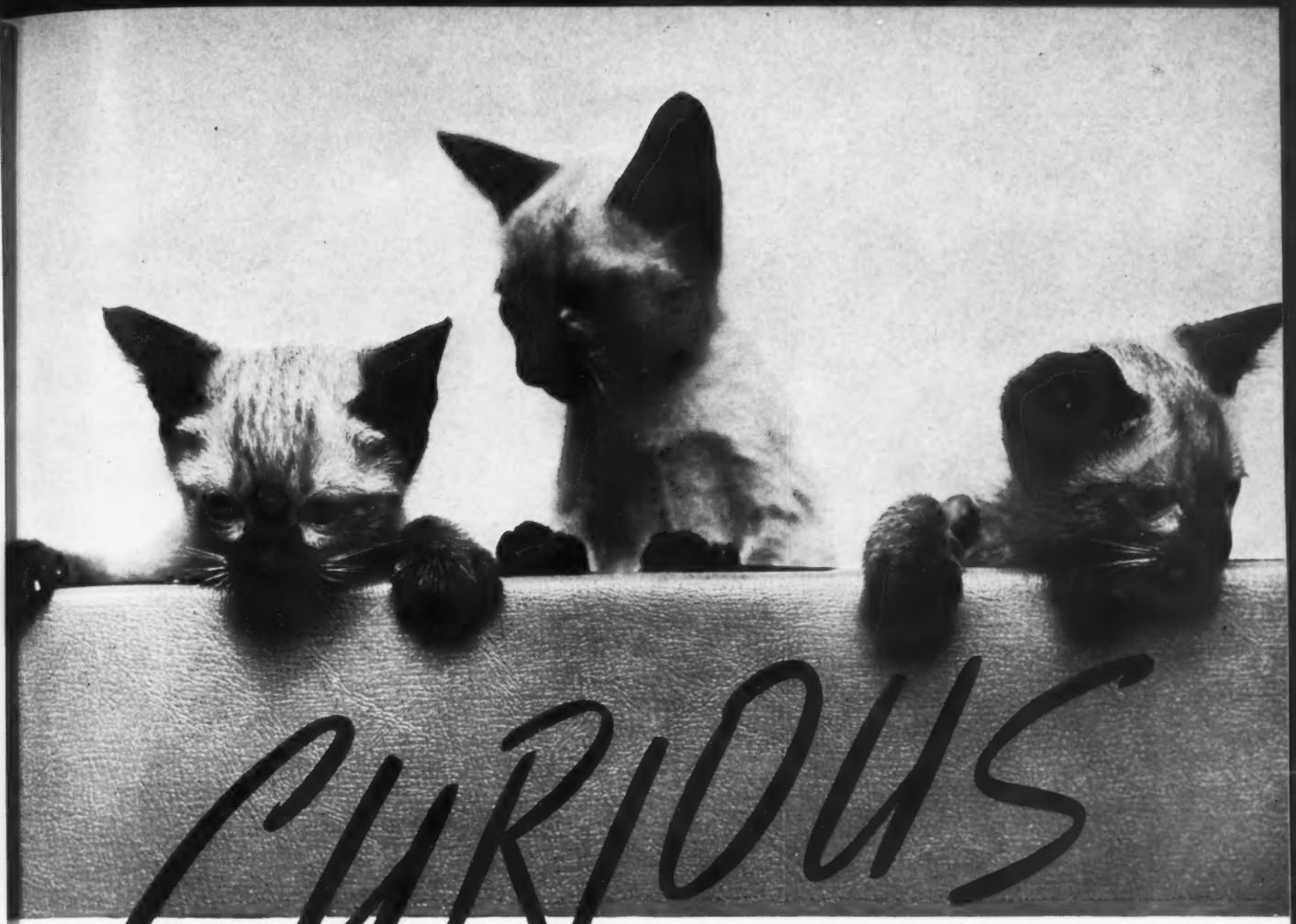
Making Famed Characteristics Visible

Coty: The gold-puffed Coty's L'Origan powder package is recognized all over the world. For years, the beauty of this handsome package, and others in this line, have been enhanced by cellulose acetate shells. So consistent are the sales of this dollar powder that some lift is necessary to convince the buying public that they are welcome gifts at holiday time. So the sparkle and glamour of gift packaging was added, without concealing the famed package characteristics, when a transparent rigid container was adopted for the Christmas market (see illustration 1).

Dorothy Gray: For some years, Dorothy Gray has been enclosing handsome powder puffs of good size with a fine satin ribbon band and bow, a really superior puff, in a bath powder container. But it blushed unseen, until in 1937, a bright designer decided to cash in on this asset by creating a box with a transparent acetate cover through which the puff and its bow could be seen. The box won an award in that year's All-America Package Competition and is now standard (see illustration 2).

Charles of the Ritz: This company adopted close-fitting acetate container for their Spur Eau de Cologne so that the very attractive bottle could be displayed to advantage (see illustration 3).

Maurice Levy: For ten years, the assorted pastel powder puffs in their line have made retail counters look like flower gardens because they have very sensibly used transparent acetate containers and let the attrac-



Are you curious about closures? Do you sometimes wonder which ones are really the best for your products?

When buying closures, consider this:

1. CCS invented the Deep Hook Thread which revolutionized the manufacture of screw caps.

2. CCS invented the Slip Rubber Ring which made One-Piece Vacuum Caps practical.

3. CCS invented the VPO Cap, an improved method of sealing hot-packed products.

4. And from the CCS Laboratories have come many other contributions to better sealing.

Why not give your products the benefit of the advanced sealing methods you get in CROWN Closures? Samples and prices are yours for the asking. Write us today.

CROWN CORK AND SEAL CO., BALTIMORE, MD.

World's Largest Makers of Closures for Glass Containers

IN THE LONG RUN -

CROWN CLOSURES COST-LESS

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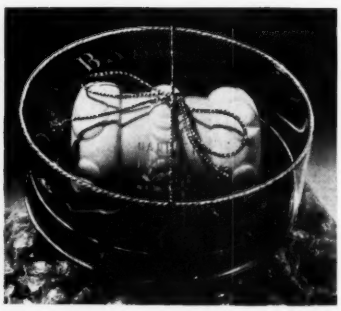

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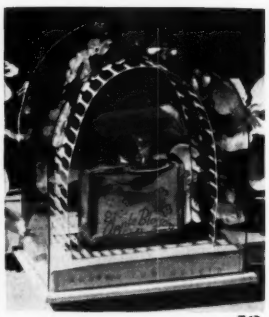

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tive puffs sell themselves. All shapes and sizes are used, all with good size openings so that removal of puffs is easy and convenient. They use transparent acetate covers on combination stock and display cases for refill powder puffs, staple items in drug and department stores, so that the entire line can be seen at a glance. This house has lately added Dorin's Fine Sachets, ranging in price from $2.50 for small sizes to $16.50 for drawer linings. Now a sachet is essentially the repository of fragrance. It must be dainty, too. The problem then was to have a package so delectable that feminine allure and fragrance would be implied. The solution was the adoption of the transparent box that did not hide the beautifully designed sachets made of quilted and printed silks (see illustration 4).

For Combining Items

Revlon Products Corp.: This firm decided to add lip rouge to their line of fine manicure specialties as part of a consistent campaign for chic via color harmony. To introduce the new lip rouge, they planned a combination package that would show to advantage the new lipstick (a trial size) and the full size nail enamel in identical shade at the price of the nail polish alone. A transparent package could do this, so they adopted the combined transparent and set-up box illustrated here and it can be seen that not only the rouge and nail enamel are included, but a well-designed folder listing other specialties in this line. A one-month's promotion of 1,000,000 combinations was planned. They were sold in three weeks (see illustration 5).

Bourjois: Popular staples of all well-equipped toilet goods counters are the Bourjois cosmetics and perfumes, "Evening in Paris" and "Mais Oui." Both lines include many items: lipsticks, powders, rouge, perfumes, etc. Many combinations of several items have been found to be profitable and all of these are now offered in transparent rigid containers. The "Mais Oui" line has a new combination in an 18-in. hat box tied with bright blue and cherry red ribbons. These colors are repeated in the design printed on the acetate cover. Thus the famous blue-starred trade mark of "Evening in Paris" and the hand-lettered "Mais Oui" trade name are all plain to be seen and so are the number and type of articles included.

Lanvin: Famed Paris Couturier Lanvin developed two toilet waters of fine quality. Despite the appeal of enchanting fragrance, glamorous names and fine bottles, they did not sell as they should. A package to hold two bottles was designed and so that the unusual bottles standing upright behind a floral border garden would be visible, a transparent acetate cover was used. Dubbed "The Heavenly Twins," the package found friends at once and now, instead of the sale of one bottle, two sell readily (see illustration 6).

Making Purpose Clear

Lavista: Those amazing concentrated Lavista sponges, that are part and parcel of all well set-up travelers' comforts, have been a staple article of fine drug and notion counters for years. Packaged in a small cylinder, and labeled in continental fashion, they jogged along at a comfortable sales pace, their volume almost constant. In January of this year, they redesigned the package, adopting a rectangular transparent rigid container in the form of a portmanteau with bright blue printed bands. The sparkle, the visibility, the "traveling bag" tie-up all presaged a continuation of volume sales, but the most enthusiastic optimist could not foresee a doubling of sales. In a year when foreign travel is at a standstill, when any traveling is confined to short stopovers where complete facilities are available, the first six months' sales are double the annual volume of the best years preceding redesign (see illustration 7).

George W. Button Corp.: For some years, George W. Button Corp. has had the exclusive right to pack for the chain stores powders put out by Bourjois, Coty and Max Factor. The face powders were packed in small metal discs about $1/4$ in. high by $1\frac{1}{2}$ in. in diameter, well printed and bearing the characteristic trade mark of the original manufacturer. With each shipment, a certain number of transparent packages were included in the display to show color, quantity, etc. They were identical in (*Continued on page 94*)

USE THE *Color* THAT ATTRACTS MORE CUSTOMERS

USE COLOR to draw attention to your product. Clinch more sales—by making the color *Maryland Blue*. There's something about the rich, royal look of Maryland Blue glass that tells Mrs. Shopper: "Here's a product of *true blue* quality and dependability—a product well worth your money." Blue builds confidence—and confidence builds sales. Above are four of many distinctive Maryland Blue stock designs, all available in a wide range of sizes. They are (from left to right) the Squat Jar, 1/2 oz. to 18 oz., Cabinet Square, 1/2 oz. to 32 oz., Chesapeake Oval, 4 oz. to 32 oz., French Square, 1/4 oz. to 16 oz. Send for samples today. Also available in crystal clear Maryland Flint.

PACK TO ATTRACT IN

Maryland Blue

MARYLAND GLASS CORPORATION, BALTIMORE, MD. . . . New York: 270 Broadway . . . Chicago: Berman Bros., 1501 S. Laflin St. . . . St. Louis: Carl Floto, 908 Clark Ave. . . . Memphis: S. Walter Scott, 435 S. Front St. . . . Kansas City, Mo.: Aller Todd, 1224 Union Ave. . . . San Francisco: Owens-Illinois Pacific Coast Company.

THE CASE OF THE BEWILDERED CUSTOMER

"It doesn't pay for us to handle a quantity that small. The unit cost would be prohibitive.

WHY NOT TRY MERIT—THEY'RE GEARED PERFECTLY FOR THE COMPLETE PRODUCTION OF SHORT RUNS, BROKEN RUNS, SMALL DISPLAYS, ETC."

LARGE LITHOGRAPHER

GENERAL PRINTER

"It would take too much time. We haven't an art department. We'd have to send the job out for mounting and finishing. And that would put the cost up.

WHY NOT TRY MERIT COMPLETE SERVICES: LAYOUT, ART, SILK-SCREEN, LETTERPRESS, DIE-CUTTING, MOUNTING & FINISHING: UNDER ONE ROOF."

Merit has just about every facility from the first rough layout to the most intricate die-cutting and finishing services right under its one roof. All the departments of display creation, layout, artwork, silkscreen and letterpress printing, die-cutting, mounting and finishing are integrated into a smooth organization especially adapted to the solution of difficult display problems. Small runs of large displays, large runs of small displays, broken runs and a host of other tough assignments are handled daily along with more routine jobs.

MERIT DISPLAY CARD CO. 36 West 20th St., N. Y. CHelsea 2—4217-8-9

Complete Production Facilit
Letterpress, Screening, Die-C
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DISPLAY DESIGN . . . . . MERCHANDISING . . . . . DISTRIBUTI

N.Y.C. display tax worries advertisers

Display users discover that the Occupancy Tax Bill may cover advertisers who use store displays and other point-of-sale material

In 1938, to obtain revenue for housing projects, New York City passed an Occupancy Tax Bill, placing an excise of from $1.00 to $6.00 upon the occupants of premises used for gainful purposes.

Today, major users of displays are up in arms to discover that city officials are interpreting the law as covering advertisers who use store displays and other point-of-sale material. Between mass meetings, threatened lawsuits, committees and city officials who have temporarily padlocked their lips, it is difficult to ascertain the exact status of this interesting and dangerous tax project. Modern Packaging, in reporting upon the project, therefore wishes to point out to its readers that the situation may change within a matter of days or even hours. We here present the situation in its status at the time of going to press and earnestly advise all advertisers who would be affected by the proposed extension (by interpretation) of the occupancy tax, to watch for further developments which are promised by city officials around the first of November.

The Occupancy Tax Bill was originally levied in 1938 to provide about $500,000 a year of revenue to subsidize housing projects. The law defines an occupant as "any person who uses or possesses for a consideration any premises under any lease, concession, permit, right of access, license to use, or other agreement for any gainful purpose."

Advertisers raised no great protest when the city tax collectors called upon outdoor billboard advertisers to pay an average of $1.00 a sign per year on their billboards. Thus the tax has been collected for the years 1938, 1939 and 1940 without being seriously contested. Based upon rentals, with a minimum tax of $1.00 and a maximum of $6.00 per year, the impost was considered as a sort of minor nuisance by most firms.

Not so mild was the reaction of display-issuing manufacturers to discover that the city's tax collectors proposed to apply the occupancy tax to displays in and on windows at a minimum rate of $1.00 for each store or any other place in which one or more such signs or exhibits are displayed. Heated protest by the Association of National Advertisers, the New York Board of Trade and other groups immediately ensued. The proposed extension of the tax was denounced as illegal, unlawful and uneconomic.

The whole legality of this interpretation of the bill seems to rest on the correct interpretation of the word "occupant." The city tax collection authorities have taken the view that the erection and placing of signs or advertising displays is use of premises for a gainful purpose. They have further reasoned that the furnishing of such signs or materials by or for the account of the manufacturer to the storekeeper, without charge for its full value, is one of the items of consideration for such use of space. Together they were ready to construe these circumstances as bringing displays within the definition of the word "occupation" as defined by the Occupancy Tax Law.

It was indicated, however, that despite this definition, the tax would not be applied to temporary exhibits (i.e., displays not installed for a period of longer than one month). Through this loophole could pass the great majority of seasonal and topical displays of a non-permanent nature. However, thousands upon thousands of permanent fixtures of metal, wood or plastics, of decalcomania, window valances, wall signs, etc., would fall within the scope of the tax collector's definition.

On September 27, the city treasurer allowed an extra 30-day time allowance for advertisers to file exceptions before the tax is levied. Thus manufacturers will have 15 days after October 27 in which to contest the assessment as provided for in the original law. Meanwhile, the city council is expected to take some further clarifying action, the nature of which has been kept completely in the dark. Mayor Fiorello H. La Guardia is reported as saying that when the tax is finally decided upon "it will represent an intelligent and reasonable policy—there will be no unreasonable or picayune construction of the occupancy tax."

Greatest fear of advertisers is that harassed local tax officials throughout the country may follow in line if the New York authorities succeed in the attempt to tax displays. Manufacturers suspect—and with good cause—that the bee may have been put in the tax collector's bonnet by retailer association officials as a step in the long established antagonism between retailers and manufacturers.

Although at first glance the difficulties of administration of a tax of this sort would seem to be insurmountable, it should be remembered that the law places the burden of proof upon "occupant"—in this case, the manufacturer sponsoring the display. If the occupant fails to file a return satisfactory to the tax department, the city treasurer may assess the occupant and unless this assessment is successfully contested, it stands as an irrevocable tax. Thus manufacturers—should the whole tax proposal stand up—might be called upon to keep records of display distribution and installation and to pay at the rate of $1.00 per store for all such installations throughout the city.

"Flashlight department" builds sales

New counter display fixture based on survey of sales problems of 2500 stores

The sale of flashlights and replacement batteries can be an extremely profitable operation for the retailer if adequate stocks are displayed for consumer examination. Few retailers, however, will voluntarily install such displays.

The Ray-O-Vac Co. has therefore developed a merchandising unit featuring seven different types of flashlights as well as a substantial assortment of dry cells. The unit was developed after long and protracted sales tests made by the company in 2500 stores of all sizes. This survey indicated that flashlight and battery sales were increased from 200 to 500 per cent when the dealer was able to display a variety of sizes and styles. When, instead of showing a card with a half dozen lights of the same style, a number of different styles were shown, sales were immediately increased. Accordingly, the company sought and found a means of setting up a flashlight department that would take a minimum of space, but would feature enough styles to satisfy at least 90 per cent of customer wants.

The resulting display occupies a counter area approximately 15 in. square. It is presented to dealers with a stock assortment at a cost under $13, including 18 flashlights and some 78 assorted batteries. Interesting feature of the display is a battery and lamp testing device attached to one corner and so positioned as to bring the replacement-battery purchaser into close contact with the display of flashlights.

The fixture is of streamlined design in a tan woodgrain finish with the Ray-O-Vac emblem prominently displayed so as to be visible from all angles. Flashlights are set into holes pierced in the curved top of the back portion of the display, these receptacles being so designed as to leave most of each flashlight open to view.

Credit: Display designed by A. G. Lopez and Associates and made by the Chicago Cardboard Co.

The "flashlight department" is a streamlined unit presenting a wide assortment of lights and batteries, yet occupying a minimum counter area. Note the lamp and battery testing gadget located at the front face of the flashlight display panel.

The Girl IN GARBER'S WINDOW

The Girl IN GARBER'S WINDOW

JOE ALWAYS opened up the cartons of display material before he threw out the stuff. That's how he met the Briar Rose Girl.

Most of the cosmetics display pieces were pretty terrible, Joe thought. They generally showed a girl. And the girl was usually some smirking professional model, trying to register oomph or kiss-papa. But this girl was different. She was life-sized, healthily pretty, and her natural coloring set off by a red evening gown. To Joe, she looked like somebody you could really go for in a big way, and introduce to the folks. She was . . . Then Joe realized that *she* was only a lithograph . . . The Briar Rose line was no world beater, but Joe felt that Mr. Garber ought to see this display . . .

Doc Garber looked up from his pestle pounding. "Hmm," he said. "I think you got something there." And then, "Maybe we ought to give it a whirl. Put it in the north window front, and spread a lot of Briar Rose stuff around. We might move some of it . . ."

SO THE Briar Rose Girl became a tentative tenant in Garber's window, at Fourth and Main. She moved in Saturday morning.

At nine-five, Ella Potts, the town's best dressmaker, was hurrying down Main Street, wondering how to figure a dinner dress for Mrs. Wilcox, whose narrow shoulders didn't match her wide hips. The Briar Rose Girl's dress suggested a strapless possibility. Ella remembered that her cold cream jar was getting close to the bottom, and cold cream was cold cream to Ella. So the Briar Rose Girl made her first sale. (And Ella sold Mrs. Wilcox a second dinner dress!)

Art Sommers left the factory at twelve, vaguely aware he had forgotten something. The Briar Rose Girl caught his eye, looked a lot like Jessie, his wife, when Jessie was young. Then he remembered. Holy sailor! His fifteenth wedding anniversary. The Briar Rose Girl made a sale for the nearest jeweler, made Mrs. Jessie Sommers a lot happier.

Mollie Meyers, waiting on the Garber corner for a bus, looked over the Briar Rose display. That jane in the window certainly had class. Mollie wondered if she did put on

too much make-up, like Ma said. Maybe the sweet, simple and girlish idea was the McCoy, after all. She stopped for some face powder, Briar Rose, and some face tissues.

The Briar Rose Girl made friends, and sales, that Saturday. Doc Garber told Joe to clear the Heating Pad Special off the stand near the door, break out some Briar Rose stuff there, and give it a ride.

FROM THAT TIME ON, the Briar Rose Girl was an old settler in town. She reminded Mrs. Gus Hornblow that a woman of forty-three, and slightly overweight, wasn't dead yet. Mrs. Hornblow picked up three Briar Rose items, found more satisfaction in her mirror. And that night Gus asked was she doing her hair up different, or something?

Pete Harris thought of Marjorie when he saw Garber's window. Marjorie was really pretty swell, and why put it off any longer? He came into Garber's and phoned Marjorie. Another jewelry sale, and some furniture.

Kate Fahey noticed that the Briar Rose Girl had hair like her own, wondered if she dared to wear a red dress. Maybe Briar Rose could do something for freckles? Kate proved to be right on both counts.

The Girl gave a lot of women in town a good break, but they didn't know it. Addie Brewster, who had the beauty shop, studied the Briar Rose Girl's hair-do, and did likewise to the advantage of her customers.

Old Mrs. Partridge was persuaded that nice girls could use Briar Rose, and Mrs. P. laid in a line, gave up scolding her grown-up daughters. The Girl stopped Chet Cosgrove

from going into a tavern, and sent him home; and was really responsible for Ethel Lotz being noticed by the boy next door, taken to the Alcazar the next night, with loge seats and double nut sundaes afterwards.

And she put the Briar Rose line on the map in the two weeks before she was taken out for a scheduled display. Alec Garber still has her stuck up over his desk in back, where she keeps on selling him Briar Rose.

A GOOD DISPLAY piece in a store is your last call on a customer—before the customer calls on you. It can be good advertising, that interests, pleases, persuades. It can be a strong salesman, close to the cash register. It can create prestige, where prestige pays off. And it has trade influence as well as public pull.

Good display costs money, but makes money. Poor display loses money—and sales opportunity! So if you use display, the best is by far the cheapest!

We concentrate on store displays. We produce many of the best you see, for many of the most successful merchandisers. Our displays rarely cost more, but invariably earn more—because we put SEE, SENSE, and SELL into superlative lithography.

Remember Einson-Freeman. And when you're ready to talk to us, say when!

THE COLOR PHOTOGRAPH
on the cover is by Paul Hesse,
Courtesy of Contouré, Inc.
Served by L. C. Gumbinner, Adv. Agency

EINSON-FREEMAN CO., INC.

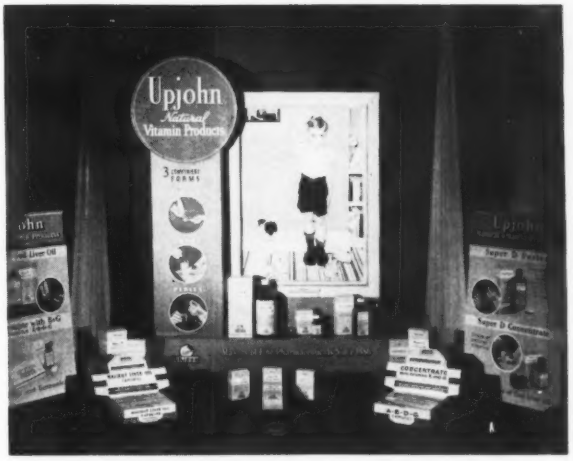
Displays that Sell

GENERAL OFFICES AND PLANT · LONG ISLAND CITY, N.Y.

Copyright, 1940
This insert lithographed by EINSON-FREEMAN CO.
Front cover plates made directly from negatives by the deep etch process

Below: The Upjohn window display which received top award in the 1939 All-America Package Competition. The center piece is a Rockwell painting, in full color, which abounds with human interest. Left: Successor to the Competition winner is this display. Again the center of interest is a color pictorial by Norman Rockwell. The entire ensemble completes a powerful yet dignified ethical approach to the consumer.

Upjohn's successful display technique



In the 1939 All-America Package Competition, the Upjohn Co. received top award in the window display division for a vitamin products display, the central feature of which was an illustration of intense human interest—a picture of a boy measuring himself against a wall. Side panels, supplementing the illustration on the central panel, illustrated and described the various forms and types of the Upjohn Company's concentrates.

The unit was not merely successful in attracting the eyes of the Competition judges, it won dealers and consumers as well. Pharmacists reacted favorably to the dignified and ethical presentation of the display's theme. Consumers were stopped and pleased by the intensely appealing color illustration rendered by artist Norman Rockwell. Without words, the illustration emphasized an easily understood theme—the simple idea that vitamin products play a vital part in fostering the healthy growth of children.

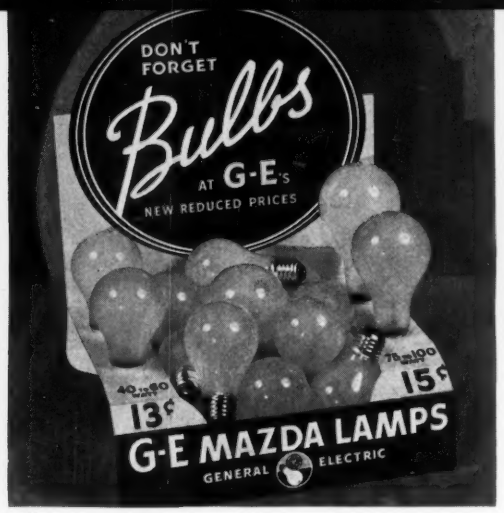
Currently, Upjohn is introducing a successor to this display, continuing in use the most successful elements of the earlier display scheme. Artist Norman Rockwell has again supplied the central feature of interest, a painting of a physician, a mother and three children. The picture is made up as a separate framed piece which, after the complete display has served its purpose, can be removed and hung on a store wall as a pleasing and intriguing ethical reminder of Upjohn products. Supplementary illustrations and side panels are once again used to illustrate and describe the various individual products and the various forms in which each product is put up. Once again, natural wood textures have been carefully lithographed on the dispay background to provide an air of sturdiness.

The new unit is reported to be achieving even a higher degree of acceptance among pharmacists than did the previous display.

Credit: Display created and produced, in full color, by The Forbes Lithograph Co.

DISPLAY

1



2

3

1 When you have a good idea, hold on to it—that's the motto of Stephen F. Whitman & Son, Inc., for the basic design of this display has been used for five successive years, the only alterations being simple changes for the improved position of Whitman's packages and the location of the copy panel. The painting was made by Harold Anderson in 1935. In addition to its use as a display piece, the Santa Claus head has been featured in Whitman's magazine advertisements every Christmas since then and the painting has been adapted to such other promotional material as counter cards, window posters, consumer postcards, etc. Produced by the U. S. Printing & Lithograph Co.

2 Here's an ingenious display basket for General Electric Mazda lamp bulbs. The unit is made of one piece of cardboard and is so die-cut as to form a container for the jumble display of actual lamps. The platform, holding the bulbs, is provided with two die-cut sections so that the bulbs may be presented in upright position. Lithographed in two colors, the unit serves as a reminder and tells a story of reduced prices. Created and produced by The Forbes Lithograph Co.

3 A striking display piece is being utilized for the presentation of Domino cigarettes. The giant-sized cigarette cutouts are so lithographed as to call consumer attention to the major features claimed for the product. The unusual shape—occupying but a small area of window space—is likely to be welcomed by dealers whose window display space is somewhat overcrowded. Produced by The U. S. Printing & Lithograph Co.

4 General Electric adopts a different type of bulb merchandiser (compare with illustration No. 2). This dispenser is constructed of sturdy corrugated board and stands $17^1/_2$ in. wide by $9^3/_4$ in. deep and 18 in. high. It is attractively printed in two colors and holds a carefully selected assortment of Mazda lamps. Different bulb wattages are in separate compartments so that bulbs may be quickly and easily selected and removed from the front. Taking up but slightly over 1 sq. ft. of counter space, this unit keeps all of its stock neat and clean and invites consumers to buy. Designed and manufactured by The Ohio Boxboard Co.

5 Die-cut gleaming white cellulose acetate sheets of heavy gauge add a distinctive note to the new Reid's ice cream sign. The plastic material is tough and long-lasting, as well as resistant to weathering. Since the color is not applied, but goes through the material, chipping and wear are no problem. The cellulose acetate material can be printed with standard processes, allowing full freedom in design, and is readily fabricated. Designed and manufactured by Design Center, Inc. Cellulose acetate by Plastics Division, Monsanto Chemical Co.

6

7

G A L L E R Y

4

5

6 The latest in a series of successful window displays for Alka-Seltzer—product of Miles Laboratories, Inc.—is this one for fall showing in 1940. It features, in large, dominant size, the portrait of a pensive young miss as painted by Earl Chambers and the lithographed reproduction is in full color. The young lady is caught in a thoughtful pose, pencil in hand and evidently making out a shopping list. Caption reminds her—and all window shoppers and passers-by—to include Alka-Seltzer among the purchases. Slide cards tell a factual sales story, while cartons and window stickers complete the presentation. Created and produced by The Forbes Lithograph Co.

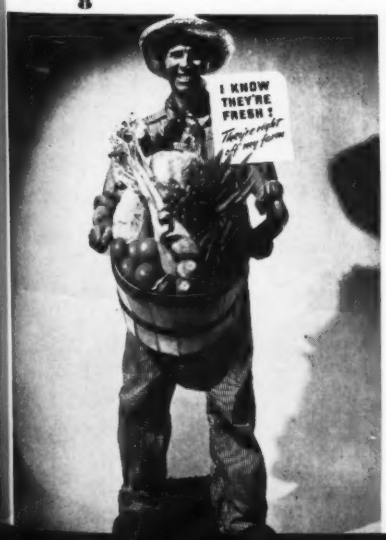
7 A new carton structure has been devised for use by distributor's salesmen in selling Nor'way anti-freeze, product of Commercial Solvents Corp. Measuring approximately 12 in. by 14 in. by 3 in., no larger than a small overnight bag, the package contains a number of related items. The package is of the self-locking type, with a tongue-and-die-cut-slot closure. Opened, it effectively displays the contents which are always easily accessible to the salesman. Heavier articles, such as the anti-freeze tester and sample bottle, are held securely in position by special corrugated interior packing. Designed by Marshall I. Williamson in collaboration with The Hinde & Dauch Paper Co. and manufactured by Hinde & Dauch.

8 This life-size lithographed cutout, depicting a typical American farmer holding a basket of vegetables, is constructed in two planes, with the basket curving out to add an additional note of realism. Every detail is reproduced with "third dimensional" fidelity, from the lined, weather-beaten face of the farmer to the brilliantly lifelike contents of the basket. Created and produced in full color by Einson-Freeman Co., Inc.

9 Baseball—whether professional or amateur—always arouses a high degree of interest. Capitalizing on that interest, Hiram Walker & Sons, Inc., have adopted this display unit for the presentation of their Ten High whiskey brand. The display's illustration is full of vigorous and intensely human character studies, calculated to stop the passer-by. Designed and produced by Ketterlinus Lithograph Mfg. Co.

10 The Wise Delicatessen Co. has adopted this floor display stand for the merchandising of its potato chips. The base of the unit is so constructed as to hold a container in which is packed $2^1/_2$-, 8- and 16-oz. bags of potato chips. Made of white corrugated board, printed in red and blue, the merchandiser invites consumer self-service. Manufactured by Bogota Paper & Board Corp.

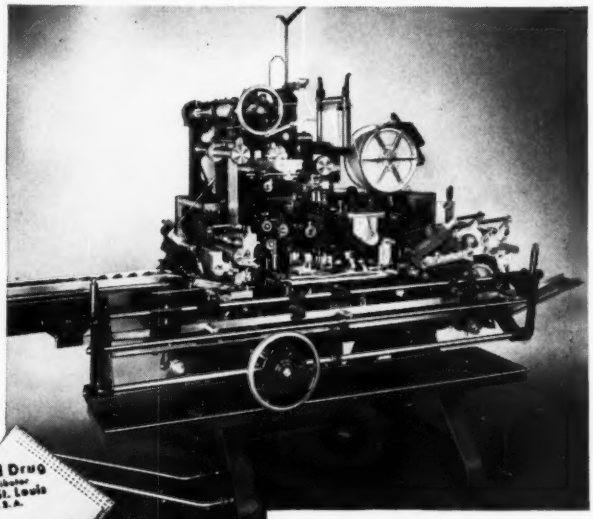
8



9

10

A "made-to-order" wrap for tape bandage



A super-sanitary wrap for individual tape bandage is produced by this newly perfected machine. Unique easy-opening device permits quick removal of the sterile bandage.

Another striking advance in pharmaceutical wrapping

This special machine for wrapping tape bandage represents an important step forward in the trend toward increased sanitary protection for pharmaceutical supplies. It is also a good example of how our machines meet the special requirements of a particular product.

Fully automatic, our Model CA-2, shown above, wraps each individual tape bandage in glassine, and double-seals the wrapping for utmost protection of the sterile bandage.

An easy-opening thread is included in the wrapping to permit quick removal, and to avoid unnecessary handling of the bandage by the user. A tug of the thread neatly zips off the end of the wrapper and the bandage may be easily and quickly slipped out.

All folding and sealing parts of the machine are readily accessible and removable so that the mechanism may be thoroughly cleaned each night.

A strong sales advantage

Wrapping that adds to convenience or contributes to the service rendered by the product has a strong sales advantage. Our machines are producing such wrapping every day for America's leading packaged goods manufacturers. We will be glad to assist you in securing a more protective package, a better looking package, a more economical package.

Consult our nearest office.

PACKAGE MACHINERY COMPANY · Springfield, Massachusetts

NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

Mexico, D. F: Agencia Comercial Anahuac, Apartado 2303 Buenos Aires, Argentina: David H. Orton, Maipu 231

Peterborough, England: Baker Perkins, Ltd. Melbourne, Australia: Baker Perkins, Pty., Ltd.

PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

PACKAGING PRODUCTION and TECHNIQUE

Analyzing packaging operation costs

by H. A. MOON

This article describes a method, developed by the author, for analyzing plant operations, with particular emphasis on the use of the method by packagers. It should be pointed out that numerous methods of operation analysis have been created and that this method is here cited without prejudice as to any others. The application of Mr. Moon's methods of packaging operations would seem, however, to justify the fullest interest of production managers.—Ed.

★ ★

In attempting to gauge the efficiency of packaging operations, four types of analysis are desirable:

1. The investigation of lost motion.
2. The investigation of the correlation between men and machines.
3. The investigation of the relationship of the packaging operations to other operations that come either before or after the actual packaging. There are, for instance, certain packaging operations which must be preceded by such activities as cleaning, washing or sterilizing of containers. Again, in certain cases, the filled container must be given some after-treatment—as for example, the cooling and testing for "leakers" in the canning of certain foods. To distinguish these supplementary operations from the actual packaging, we shall term them "indirect packaging operations" as contrasted with "direct packaging operations."
4. The investigation of the part that the packaging operations play in creating peak loads for power systems, steam systems, electrical systems, for labor and for the use of refrigeration or other machinery.

A four-point investigation of this nature can be conducted by the use of a survey method known as "Color Balance Analysis." Among the advantages of the method are its simple non-technical nature, the speed with which it provides the necessary data and permits their analysis and the low cost of conducting a study. By this method, it becomes possible to determine whether or not a given plant, or operation of a plant, is making the best use of men and machines.

"Color Balance Analysis" is an analytic method of studying the existing operative plan. It is devoid of technology and hence can be carried on and understood by those untrained in engineering or the intricacies of cost accounting. This study method of activities does not take the place of surveys such as cost accounting, time and motion study, etc. Rather it is a first step to the effective use of such surveys or studies.

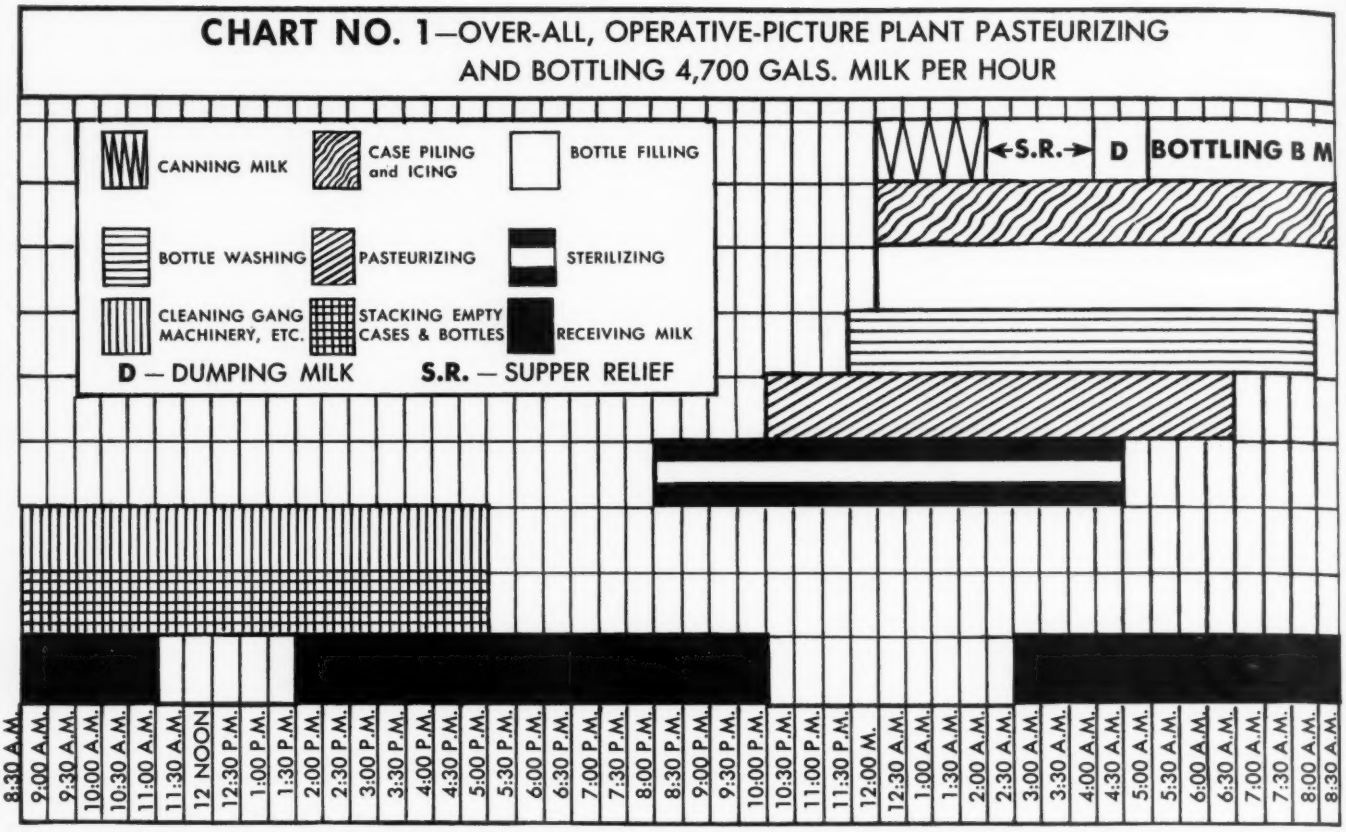
The major objective in making a "Color Balance Analysis" survey of the packaging activities of a given industrial concern has a twofold purpose. The first is to justify the present operative packaging plan in force and the second is to point out defects, if any exist, in the present operative packaging plan.

For the sake of clarification, we will cite the application of this method of package operative study to a given plant, pasteurizing and bottling milk. In order to simplify matters, only one aspect (lost motion) of packing activities will be considered.

A certain milk pasteurizing and bottling plant had a machinery layout of such capacity that it could handle, pasteurize and bottle 40,000 lbs. of milk per hour. This is equal to 470 ten-gal. cans of milk. This plant produced approximately 3,000 (ten-gal.) cans—30,000 gals.—of bottled pasteurized milk with a force of 58 men.

A questionnaire was filled out by the superintendent of the plant which enabled the making of the overall picture of plant operative procedure (see Chart No. 1). The starting and stopping time of the various crews of men is shown. The general operative plan, covering a time spread of 24 hours, is pictured, showing the simultaneous action of all operations.

This picture, in connection with answers to the questionnaire, gives us a "par" chart or map. It shows the theoretical possible handling, pasteurizing, bottling, canning and putting into cold storage of goods at the rate of 40,000 lbs. per hour. The plant had a machinery setup and labor force sufficient to accomplish this. This was possible by having a certain general production and operative schedule in force and by having the crews of workers put in an $8\frac{1}{2}$-hour work day with an hour and a half off for lunch. The "par" chart shows that it would be theoretically possible to produce eight and a half times 40,000 lbs., or 340,000 lbs., of bottled



goods during the $8^1/_2$ hours of bottling time. This is equivalent to approximately 40,000 gals.

If the plant were to produce 40,000 gals. of bottled goods in this time spread of $8^1/_2$ hours, it would have done the work in par, or 100 per cent efficiently, considering the nature of the machines used, the time the various crews worked and the schedules that were in force.

The second step of the analysis called for a detailed study of the activities of machines having a direct or indirect bearing upon the packaging of the finished product. For this purpose a number of major questions had to be answered.

1. What is the number of, production capacity of and name of all machines used in packaging operations, either direct or indirect? Same for all machines used in plant.

The pasteurizing equipment had a rated and actual capacity of 40,000 lbs. (470 ten-gal. cans) per hour. The bottling machinery consisted of three filling machines. Each filler had an actual filling rate of 105 bottles per minute. This for quarts, pints and half-pints. The ten-gal. cans, five, three, two and one-gal. cans, that were filled for the bulk wholesale trade, were filled by a semi-automatic can filler. The filling of milk into cans was carried on at the rate of 5,000 gals. in a time spread of two hours. The bottle washing machinery consisted of two bottle washers. Each machine had a washing capacity of 158 bottles per minute for all sizes—quarts, pints and half-pints. This gave a total bottle washing capacity of 18,960 bottles per hour for the two machines, or 9,480 bottles per hour for each.

The bottling department, with three machines (fillers), had a capacity of 105 bottles per minute for all sizes—quarts, pints and half-pints.

The capacity of the bottle fillers, when filling quart bottles, was: (a) Using one filler—6,300 qts. or 157.5 ten-gal. cans per hour. (b) Using two fillers—12,600 qts. or 315 ten-gal. cans per hour and (c) Using three fillers—18,900 qts. or 470 ten-gal. cans per hour.

The capacity of the bottle fillers, when filling pint bottles, was: (a) Using one filler—6,300 pts. or 78.75 ten-gal. cans per hour, (b) Using two fillers—12,600 pts. or 157.5 ten-gal. cans per hour and (c) Using three fillers—18,900 pts. or 236.25 ten-gal. cans per hour.

The capacity of the bottle fillers, when filling half-pint bottles, was: (a) Using one filler—6,300 half-pints or 39.375 ten-gal. cans per hour, (b) Using two fillers—12,600 half-pints or 78.75 ten-gal. cans per hour and (c) Using three fillers—18,900 half-pints or 118.125 ten-gal. cans per hour.

2. What is the production capacity of the plant per hour for all operations?

The production and handling rate per hour was found to be 40,000 lbs. or 470 ten-gal. cans per hour.

3. What is the operative schedule of all machines during the day's run? How many men are required to operate the various machines used? What is the labor shift schedule?

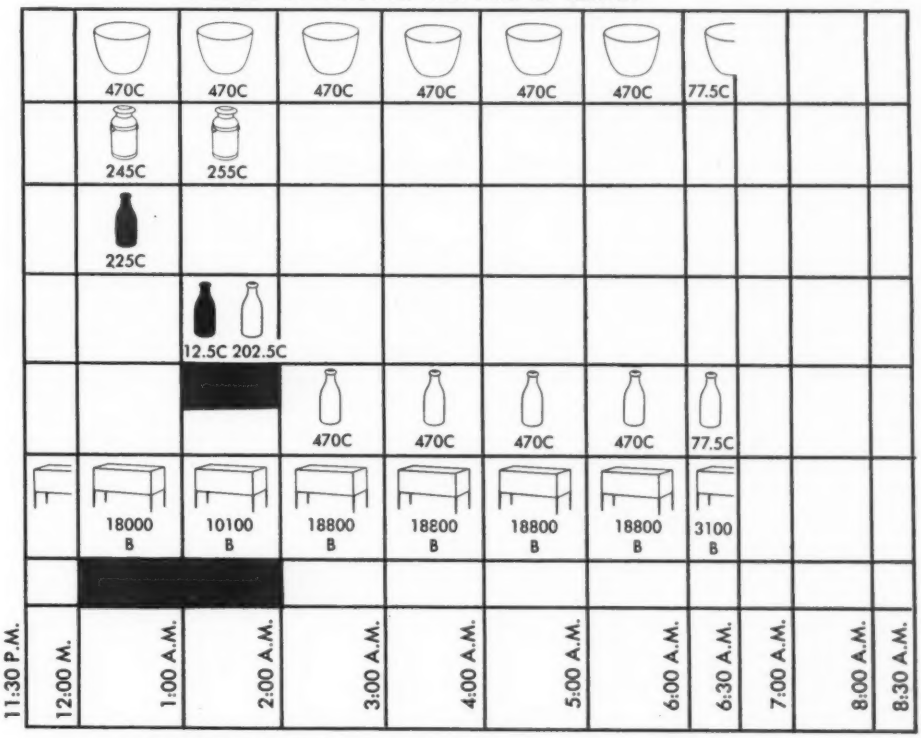
The bottle washing crew (ten men) worked from 11:30 P.M. to 8:00 A.M. The operators had one-half hour off for lunch, each dropping out in turn. Each operator put in eight hours of actual work. The pasteurizing crew (two men) covered a time spread from

10:00 P.M. to 6:30 A.M. The pasteurizing department started at 10:00 P.M., but the first milk was not ready for bottling until 12:00 P.M. midnight. The bottling filling crew (twelve men) started bottling at 12:00 P.M. midnight and worked until 8:30 A.M., with each man dropping out one-half hour for lunch.

Having collected and charted this mass of data in an orderly manner, we then find ourselves in a position to balance the machine hours of work paid for against the actual work done by these machines.

Analyzing the work done, hour by hour, we have the following: From 12:00 P.M. midnight to 1:00 A.M., we have pasteurized 470 ten-gal. cans of milk. We have put 245 ten-gal. cans of this into cans and the remaining 225 ten-gal. cans we have bottled in pints. These two packaging operations take care of the pasteurizing rate of 470 ten-gal. cans per hour. We note that 225 ten-gal. cans of milk make up the day's order for pints. This calls for 18,000 bottles to be washed. The capacity of the two washers in one hour of running time was 18,960 bottles. We have lost 960 bottles that could have been washed. The usual tolerance is five per cent of the theoretical. Hence, we have a 948-bottle shortage in washing allowed for tolerance.

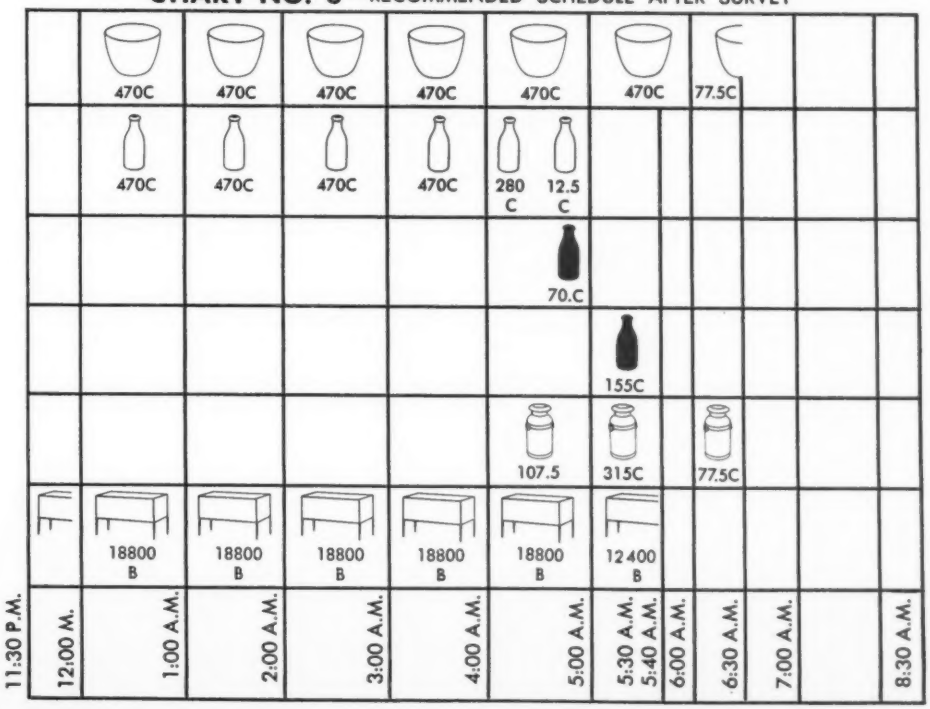
CHART NO. 2 – PASTEURIZING · BOTTLING and BOTTLE WASHING
SCHEDULE IN FORCE AT THE TIME OF SURVEY



LEGEND

- = PASTEURIZING
- C = 10 GALLON CANS
- B = BOTTLES
- = CANNING MILK
- = BOTTLING PINTS
- = BOTTLING ½ PINTS
- = BOTTLING QUARTS
- = BOTTLE WASHING
- = LOST MOTION TIME

CHART NO. 3 – RECOMMENDED SCHEDULE AFTER SURVEY



In other words, we consider that at this hour, 12:00 P.M. midnight to 1:00 A.M., we have kept up to the washing rate. From 1:00 A.M. to 2:00 A.M., we can the rest of the canned milk order, which is 255 ten-gal. cans. The total amount to can is 500 cans. From 12:00 P.M. midnight to 1:00 A.M., 245 containers were canned. The total letdown from the pasteurizer at this hour was 470 ten-gal. cans. Hence, 470 cans, less 255 cans, equals 215 ten-gal. cans to be bottled. Our order for half-pints calls for 12.5 ten-gal. cans. This leaves 202.5 ten-gal. cans to be run into quarts.

This arrangement of the filling or packaging work takes care of the pasteurizing capacity, 470 ten-gal. cans, at this hour, but we find that we have not kept up to the bottle washing capacity of the washers. We used up 2,000 bottles on half-pints and we used up 8,100 bottles in bottling 202.5 ten-gal. cans into quarts. This makes a total of 10,100 bottles delivered from the washers to the fillers at this hour. This shows lost machinery motion for the washers of 8,100 bottles at this time. We lost machine time that was capable of producing 8,100 bottles. The two washers can handle 8,100 bottles in approximately 26 minutes. Hence it is that we have lost almost one-half the capacity of these two washers during this hour. We have lost the production capacity (washing work) of the crew of washers (ten men) for almost one-half hour or five man-hours at 67.5 cents, or $3.375.

The maximum production of the three fillers, all sizes, was 18,960 bottles per hour. During the hour of 1:00 A.M. to 2:00 A.M., we have bottled 2,000 half-pints and 8,100 qts. If we use all three fillers, we bottle the 2,000 half-pints (the total half-pint order) in approximately 25 minutes. We have used a total productive filling time of 35 minutes during this hour. We have lost 25 minutes of productive filling time for twelve men and three machines at this hour. We have lost approximately one-half hour of productive filling time for the men and machines at this hour. We have been operating twelve men in this department and the time of twelve men for one-half hour is equal to six man-hours of time. We have, therefore, lost the productive time of three machines and twelve men for one-half hour. Six man-hours at 67.5 cents per hour is equal to $4.05. The total money loss at the hour of 2:00 A.M. is equal to $7.425. This loss was caused by lost motion of the machines for one-half hour—the three fillers and the two washers.

By 2:00 A.M., we find that we have filled our 500 ten-gal. can order, our 225 pts. ten-gal. can order, our 12.5 half-pints ten-gal. can order and 202.5 ten-gal. cans of the total 2,160 qts. ten-gal. can order. Hence, we have yet to fill 1,975.5 ten-gal. cans (2,160 minus 202.5) into quarts.

The chart shows that from 2:00 A.M. to 3:00 A.M., from 3:00 A.M. to 4:00 A.M., from 4:00 A.M. to 5:00 A.M. and from 5:00 A.M. to 6:00 A.M. we are pasteurizing 470 ten-gal. cans per hour, washing 18,960 bottles per hour and filling at the rate of 18,800 bottles per hour. Hence, from 2:00 A.M. to 6:00 A.M. we are operating at approximately 100 per cent efficiency. At 6:00 A.M. we have yet to run 77.5 ten-gal. cans into quarts to complete our quart order. This will take approximately ten minutes, using three fillers. We will, therefore, be through with our entire bottling and canning operations at 6:10 A.M. Allowing five per cent tolerance for delays, we will finish all work by 6:30 A.M.

The overall picture of machinery activity, shown on Chart No. 2, shows that the pasteurizing equipment has been operated to maximum capacity at all times. Its rated and actual capacity was 40,000 lbs. (470 ten-gal. cans) per hour. At this rate of production, it took six hours and ten minutes to pasteurize 2,987.5 ten-gal. cans of milk which was the day's total order. If we add 20 minutes to this time, for a five per cent tolerance for delays, we see that all pasteurizing is through by 6:30 A.M. The pasteurizing operation was started so that milk was ready for the fillers at 12:00 P.M. midnight.

The chart shows a lack of machinery filling balance to the capacity of the fillers and washers for the first two hours of operation. The rest of the day's filling and washing activities are in balance with the capacities of the machines used. The aim of the planner of packaging operations is to arrange the flow of work through the machines used so that the rate of production of the machines reaches the maximum at every hour. This he failed to do in this case and there was a resultant loss of $7.425 per day. The plant operated 365 days in the year. The annual loss is $2,710.125.

In connection with this method of figuring the money value of lost motion of machinery time, we will make the following explanations: The bottle fillers and washers, although automatic as to most of their operations, require the use of men for their running. Hence, in order to obtain the cost of operating fillers and washers for one hour of running time, we must figure the labor cost of operating these machines, as well as the cost of electric power, steam and materials used in washing and also the depreciation value and the interest on the investment.

Chart No. 3 shows a rearranged filling schedule. By this manner of scheduling the flow of goods through the machines, we are able to finish the bottling, canning and bottle washing by 5:20 A.M. We will add the same tolerance of 20 minutes as we did in the former method of operation. This will make our stopping time for machine activities to be at 5:40 A.M. We have operated the machines to their maximum capacity for every hour of the day's run. We have balanced the actual machinery results against the expected machinery results and we have lost no machinery productive time. We started the machinery filling activities at 12:00 P.M. midnight and finished at 5:40 A.M. We now have the use of 22 men's time from 5:40 A.M. to 6:30 A.M. that can be put to some other use. We have this latent man power in reserve for future expansion of packaging production and by this rearranged packaging schedule, we have saved the time of 22 men for 50 minutes, or 18 man-hours of work. This, figured at 67.5 cents per hour, is equal to $4,434.75 per year!

Achieving low cost sales appeal

New Austin Packing Co. plant producing efficiently for the "less than a nickel" lunch snack

In the spring of 1935, two brothers thought they saw an opportunity for the merchandising of prepared peanut butter sandwiches at soda fountains, lunch counters, taverns and roadside stands. They started on the traditional shoestring, converting their own living room into a workshop. A girl was hired to spread crackers with peanut butter, topping each off with another cracker to make a sandwich. Four such sandwiches were wrapped in a sheet of transparent cellulose and a printed label used to seal each end.

From this primitive start, the Austin Packing Co. has grown until today it occupies a 15,000 sq. ft. plant in Baltimore and employs some 65 people, producing millions upon millions of peanut butter sandwiches and other cracker products annually.

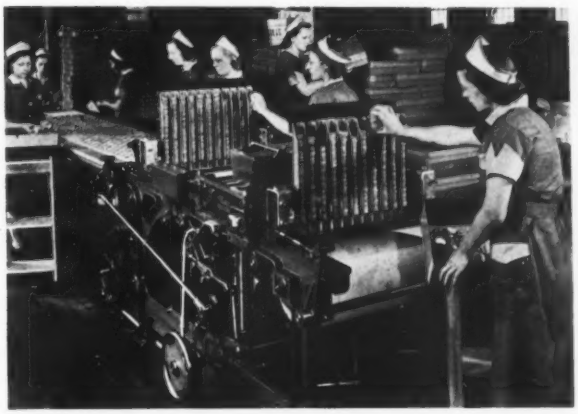
Automatic machinery is today used to form the sandwiches. From reservoir tiers, eleven crackers are dropped simultaneously upon a moving belt. The proper quantity of peanut butter is laid upon each cracker and eleven more crackers then top off each sandwich, the belt passing on to a cooling and examining table and thence to packing stations. This machine produces 550 sandwiches a minute or more than a quarter-of-a-million in an eight-hour day.

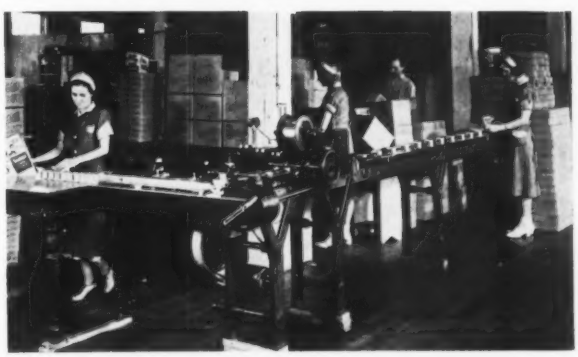
Individual sandwich packages, designed to be sold for a penny a piece, are formed on a transwrap type machine. Pre-printed cellophane is fed from rolls and formed into a continuous tube by the machine which heat seals the tube at given intervals to form individual bags into which the sandwich is automatically inserted.

Five-cent packages consist of a square window carton overwrapped with transparent cellulose. The carton is here used to afford greater protection for the product and to provide for more easy packing by eliminating shape irregularities which would occur if the sandwiches were merely wrapped in cheap material. The cartons are hand filled and then wrapped on an automatic machine.

Larger packages are formed of single-faced corrugated material extending about one-third of the way around the crackers with an all-over transparent cellulose overwrap and end labels.

Credit: Wrapping machine, Scandia Manufacturing Co. Semi-automatic wrapper, Miller Wrapping and Sealing Machine Co. Transwrap machine, Stokes & Smith Co. Transparent cellulose, E. I. du Pont de Nemours & Co., Inc. Transparent cellulose conversion, Shellmar Products Co.



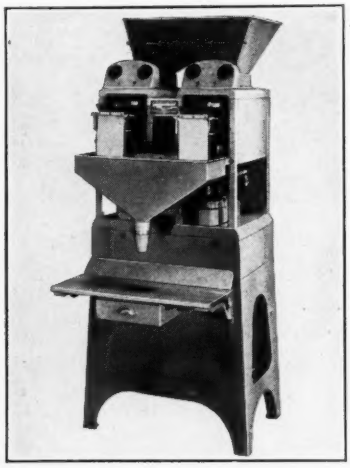


Equipment and Materials

NEW DEVELOPMENTS IN PACKAGING MACHINERY • METHODS and SUPPLIES

VIBRATORY FEED WEIGHER

The Triangle Package Machinery Co. has announced an addition to its line of Elec-Tri-Pak vibratory feed weighers, known as Model N2A. The machine is designed to automatically weigh dry materials such as peas, nut meats, cereal, beans, etc., as well as powders, granules and tablets, discharging into bags, bottles, cartons, cans or envelopes. Production speed is



claimed to be 51 to 30 weighings per minute in a range from 4 oz. to 5 lbs.

Material to be packaged is fed into a hopper at the top of the machine. From the hopper, the product passes on to electrically vibrated food plates which discharge into weigh buckets. Each of the buckets is connected directly to the balance beam of a scale, located directly under the discharge mechanism, one independent scale for each bucket. When the load in either bucket balances its scale, which has been set to a predetermined weight, a mercury switch, attach to the balance beam, cuts out and stops the electrically vibrated food plates, thus causing the discharge of material. Simultaneously, a rotating cam engages the trip lever of the bucket and discharges the weighed load through a hopper into the package. When the bucket is relieved of its load, the scale becomes unbalanced and the mercury switch completes the contact necessary to operate the vibrating feed plates, thus automatically starting the cycle over again.

DISPLAY CORD

Fibre-Flex display cord, a new patented product of the Grand Rapids Fibre Cord Co., is designed for use in decorating displays. The material consists of a core of Kimberly-Clark Corporation's Kimpak, with an outside overwrapping of colored fibre. The circular cross-section material is available in diameters ranging from $^1/_4$ in. to $1^3/_4$ in. In addition to seven stock sizes, other diameters, colors and consistencies are available. The material, it is stated, can be draped or shaped to form script lettering and designs.

HEAT-SEALING PAPERS

The Dennison Manufacturing Co. has announced the launching of its perfected line of heat-seal papers. The newest development in heat-sealing involves the use of regular labeling papers, coated with a heat-sealing adhesive. Dennison is offering five different types of adhesives, designed to meet every type of problem. These can be coated on uncoated, coated, pyroxylin and foil stocks, it is reported. Firm permanent adhesion to such surfaces as wax, oil, plain, glazed and coated papers may be obtained, it is claimed, as well as adhesion to cellophane, Pliofilm, glass, plastics, tinplate and wood with printed and varnished surfaces.

Several meat packers have for some time been branding their frankfurters with thermoplastic papers.

Aside from their advertising value, frankfurter bands possess grease- and water-resistant characteristics, due to the combination of a heat-seal adhesive on one side and varnish on the other. The adhesive used for frank-

FOOD LEADERS

Say it with orders!

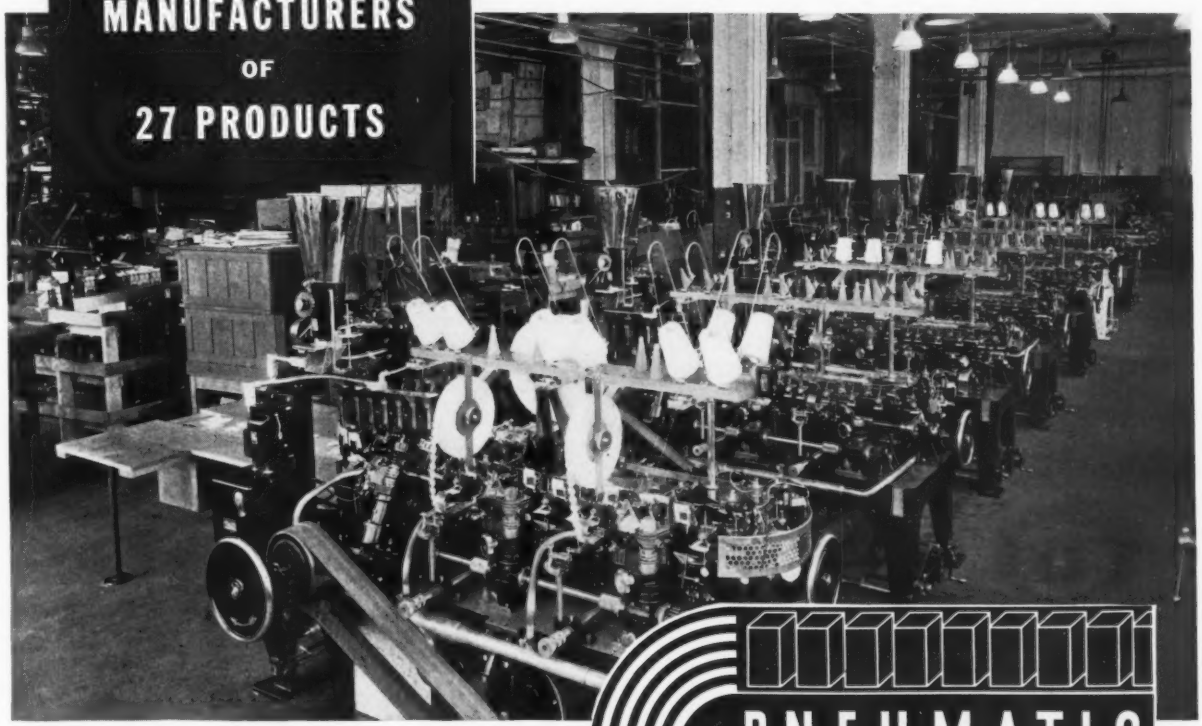
SOLD
IN THE FOOD FIELD
IN TWELVE MONTHS
141 MACHINES
IN
23 STATES
TO
64 DIFFERENT MANUFACTURERS
OF
27 PRODUCTS

Because Pneumatic's leadership in the food industry is typical of every branch of packaging, let's take a look at the record for a twelve month period. During this time, foodmakers from Vermont to Texas, from Vancouver to Havana and from Quebec to Brazil bought enough Pneumatic machines to turn out nearly three million food packages daily.

They installed Pneumatics for handling many different functions and a wide variety of containers. For example, forming and lining cartons, cleaning glass containers, filling paper bags, labeling bottles and cans, making individual tea bags, etc. These recent machine installations are handling such food items as prunes, pickles, mustard, maple syrup, fudge mix, flavoring extract, crackers, cornstarch, olives, tea and coffee.

"For Better Packaging, Buy Pneumatic."

Write to-day for your copy of Bulletin #100, a pictorial review of 40 different Pneumatic machines. It will be a useful addition for your packaging information file.



Battery of high-speed Tea Baggers undergoing final test on our assembly floor before shipment.

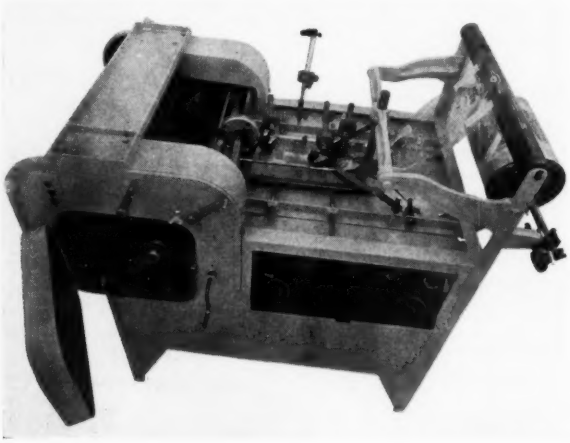
PNEUMATIC SCALE CORPORATION, LTD.
71 Newport Ave., Quincy, Mass. (Norfolk Downs Station)
Branch Offices:
NEW YORK · CHICAGO · SAN FRANCISCO · LOS ANGELES

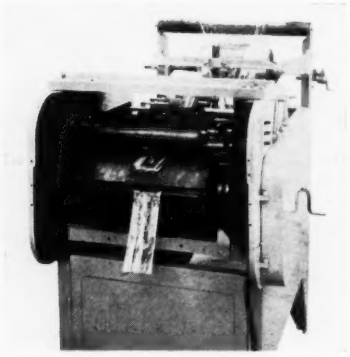
★ PNEUMATIC
PACKAGING & BOTTLING EQUIPMENT

furter bands is said to be non-toxic and can be used with impunity in contact with food products. These bands are applied by means of a small thermo-seal unit which enables even a fairly inexperienced operator to average 1,000 bands per hour. The adhesive on these bands, after very quick contact with the heating unit, is said to stick quickly and permanently to the varnished or printed surface.

AUTOMATIC BAG-MAKING MACHINE

Edw. E. Anderson is now marketing a new automatic bag-making machine which is claimed to produce from 40,000 to 75,000 bags per day. The unit is capable of





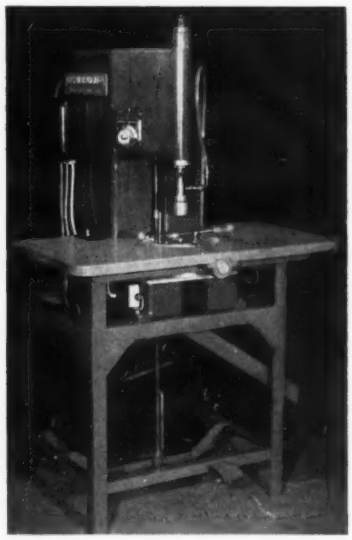
making flat or square, single or duplex bags in either plain or printed transparent cellulose material. Bag sizes, it is reported, may range from $1^1/_2$ in. by 3 in. to 10 in. by 26 in. All length gears and one width former are furnished with the machine which is equipped with a $^1/_4$ hp. motor. Heat control is thermostatic.

CHECK WEIGHING SCALE

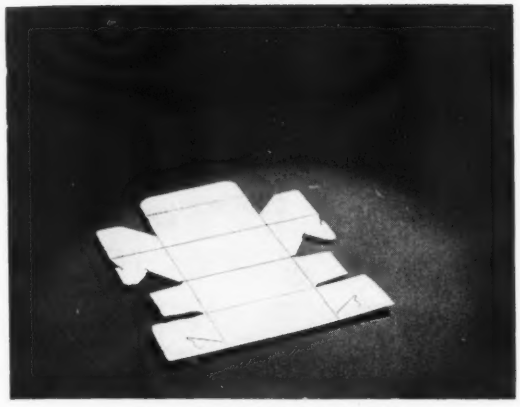
An aluminum speed scale has been developed by Detecto-Gram Scales, division of The Jacobs Bros. Co., Inc. Built on the over and under principle, the scale was especially designed to speed up the weighing process without sacrificing any accuracy. A short lever fall and a new flex movement, it is reported, not only make the unit a fast action piece of equipment, but greatly reduce the wear on bearings and pivots, giving longer life to the new scale. The end position for the tower makes the speed scale compact and easier to use on a production line, it is reported. Various scoops or commodity plates, as required by a particular application, can be supplied to accommodate for the wide range of weighing, packing and checking where speed and accuracy are important production factors.

HYDRAULIC DRAWING PRESS FOR TRANSPARENT PLASTIC SHEETS

The Taber Instrument Co. has announced the development of a series of hydraulic and mechanically actuated presses especially designed for the shallow or



deep drawing of transparent sheet plastic materials. The new line includes machines ranging from small hand presses using individual blanks to fully automatic equipment with multi-stage deep dies operating on roll material. Machines are equipped with heat control mechanisms.

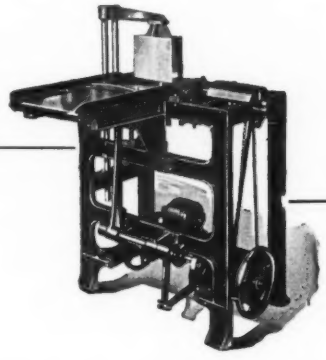


Type of die-cut carton handled on this equipment

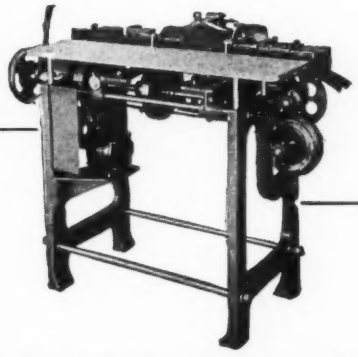
KEEP THAT CARTON PACKAGING COST DOWN

. . . WITH

THESE PETERS MACHINES



This PETERS Adjustable JUNIOR CARTON FORMING AND LINING MACHINE sets up 30–40 cartons per minute, requiring one operator. After the cartons are set up, they are carried by conveyor to the packing table or filling unit.



This PETERS Adjustable JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 30–40 cartons per minute. No operator required. The open, filled cartons enter machine on conveyor and leave machine completely closed.

This job is easy. In fact, with these machines you can feel confident your packaging cost reaches a minimum. At first, you may have only one or two sizes to handle. In the future, if you desire, adjustable parts can be purchased to fit and operate on these machines.

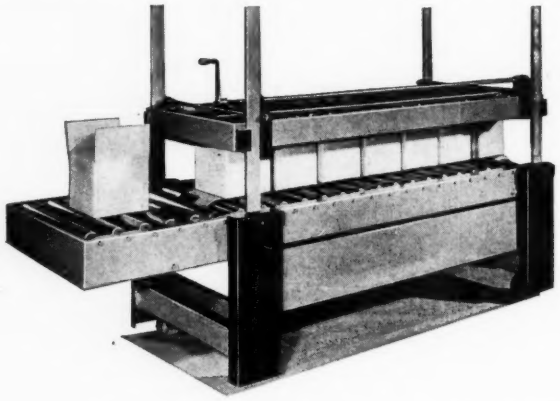
To investigate equipment to meet your requirements it is only necessary to send us a sample of the cartons you are interested in handling.

Ask for information on these economical machines and see what a large reduction per package can be realized in your plant. Your inquiry will receive prompt and careful attention.

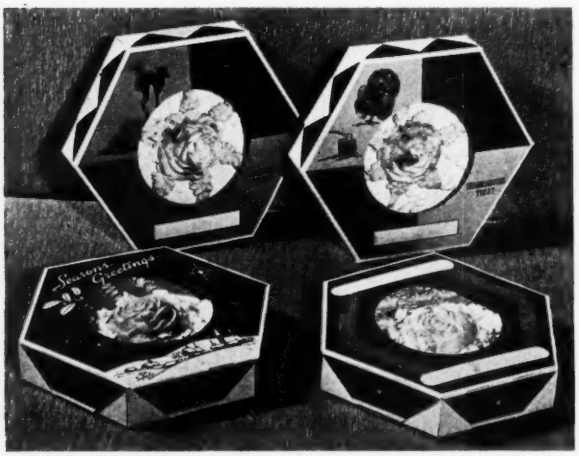
PETERS MACHINERY CO.
4700 Ravenswood Avenue, Chicago, Illinois

HAND GLUER

The A-B-C hand gluer, produced by the A-B-C Manufacturing Co., will handle corrugated shipping containers up to 26 in. in width and up to 26 in. in height, in any length. There is no adjustment necessary, or possible, for containers of different widths. The only



operating adjustment on the machine is the vertical adjustment of the upper belt section which is controlled by a crank located at the operator's finger tips. Motion is transmitted by solid steel shafts, through cut-steel worm-and-spur gears to racks cut in heavy steel uprights. The light-weight upper section can be easily and quickly adjusted to different container heights. The gluer is mounted on 4-in. steel and ball-bearing casters for easy movement from place to place.

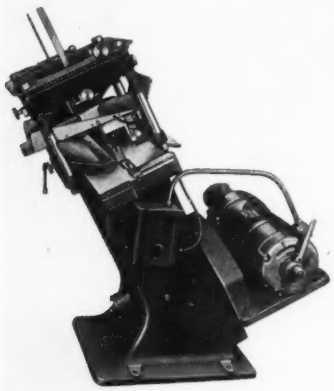


ICE CREAM PIE CARTON

A new line of transparent window cartons for ice cream pies has been introduced by the Sutherland Paper Co. The new packages, hexagonal in shape, have been designed to popularize ice cream during the cold weather months. The hexagonal cartons are shipped flat in two pieces and can be assembled quickly and easily. With each carton, a metal-rimmed paper plate is furnished in 7- and 8-in. sizes. The ice cream is poured into the paper plate and hardened. Then it is decorated and placed in the transparent window carton. Thus the paper plate serves efficiently as a mold and a container. The ice cream specialty cartons feature suitable designs for Halloween, Thanksgiving, Christmas, as well as an all-occasion design which is suitable for any time during the year.

DIE-CUTTER

The Printing Machinery Co. has announced the development of a new die-cutting machine which is said to cut up to 300,000 labels per hour, handling any label that can be cut with a hollow die. Powered by a 3-



hp. motor, the machine's pressure ram makes ten strokes per minute, cutting 500 labels per stroke from standard thickness label paper. The standard size die-cutting machine will cut any size of label from 1 in. sq. to $6^1/_4$ in. sq. Special machines are available to handle larger sizes.

NEW CHEMICAL

A new heavy chemical that can be used to advantage in the basic processes of many large industries is announced by the Mathieson Alkali Works, Inc. The new chemical is sodium chlorite, called "chlorite" for short. One of chlorite's special properties consists of its unique bleaching power. It is reported to be strong enough to bleach the coloring matter in cotton, rayon, wood pulp and other cellulose fibers, but, unlike hypochlorite, it is not strong enough to attack the fibers themselves. The advantages of using sodium chlorite for bleaching wood pulp were outlined at a recent meeting of the Technical Assn. of the Pulp and Paper Industry. These advantages are high brightness without loss of fiber strength, small loss of brightness with time, no loss of the desirable chemical properties of the pulp and elimination of the need for rigid chemical control of the bleaching process. Chlorite also makes possible the production of stronger, whiter paper and also cotton, rayon and other kinds of textiles. The new chemical is especially valuable for bleaching kraft pulp, thus extending the usefulness of kraft paper and increasing the output of our kraft pulp industry.

this new Morrison

Wire Stitches Cartons Faster, Better, Cheaper

NOW ready for immediate shipment—a complete new line of Morrison Wire Stitchers for manufacturing and box work—standard arm stitchers, bottom sealers, top sealers, side seamers, and combination units—all incorporating the radically different new SL-type stitching head.

Outstanding among the features of this new Morrison are:

1. Standard speed of 290 stitches per minute. Higher speeds are furnished when desired.
2. Ball and needle bearings at vital points.
3. Simplicity and accessibility of all working parts, which make for easier operation and lower maintenance.
4. New-type unique mechanisms for cutting and straightening wire, adjusting for stock thickness, and forming and driving stitches, which result in better, more uniform work.
5. Exclusive new rubber safety-cushion clutch, which reduces shock, wear and noise, and protects stitching mechanism.
6. Silent double-V-belt drive.
7. Exclusive quick-change spool bracket, which permits changing wire spools without disturbing wire tension.
8. Easy action treadle, adjustable for large or odd-shaped work.
9. Stitch supporting shoe swings on a pivot, avoiding the friction of a shoe contained in a housing.

To appreciate the advantages of this new Morrison, from the standpoint of production, operation and maintenance, you must see the machine at work. With sales and service representatives in important industrial centers, we are prepared to supply Morrisons promptly, in whatever models you need to do any kind of materials fastening jobs. Write us for further information and for a demonstration.

Morrison Stitchers are manufactured and sold by:

SEYBOLD DIVISION, Harris • Seybold • Potter Co.
843 Washington Street • • • Dayton, Ohio

NEW YORK: E. P. Lawson Co., Inc., 426-438 W. 33rd Street
CHICAGO: Chas. N. Stevens Co., Inc., 110-116 W. Harrison St.
ATLANTA, GA.: Harris-Seybold Sales Corp., 120 Spring St., N.W.
SAN FRANCISCO, LOS ANGELES, SEATTLE: Harry W. Brintnall Co.
DETROIT: Chas. A. Strelinger Co. 149 E. Larned Street
TORONTO, MONTREAL: Harris-Seybold-Potter (Canada) Limited

This is the new Morrison Bottom Stitcher, Model SLH, with 15" throat. Also available is Model SLJ with 25" throat. Write for catalog showing all types of machines.

MORRISON
WIRE STITCHING MACHINES

Plants and Personalities

GEORGE SWITZER, industrial designer, died October 9 at the age of 40. Mr. Switzer, who helped organize the Service Graphique Internationale in Paris in 1930 and who directed the first International Exhibition of Modern Packaging and Materials in New York, designed for 65 American companies.

He was born in Plymouth, Ind., and was graduated from the University of Illinois, a Phi Beta Kappa member. He became sales manager for a religious publication firm and doubled its business in 16 months, earning nearly $20,000 annually.

GEORGE SWITZER

Mr. Switzer resigned, however, to become an industrial designer and in two years was art director of Wasey & Co., Chicago advertising agents. Then he moved to New York to work for Young & Rubicam and while with that firm, he designed envelope stickers, messengers' uniforms and delivery trucks.

He won two of the three awards in the All-America Package Competition in 1937 against 12,000 other entries, with designs of modernistic packages for the Eagle Pencil Co. and the Geo. A. Hormel Co.

ANCHOR HOCKING GLASS CORP., Lancaster, Ohio, has announced that its Pacific Coast Closure Division will start manufacturing operations in its new and first Western closure factory, 4494 East 49th Street, Los Angeles, Calif., about November 1. The new factory is a modern, one-story, fire proof, brick structure, occupying a quarter of a city block. It has its own railroad siding and a loading dock for transport trucks. It is equipped with the newest type of high-speed, straight-line, automatic machinery for the production of plain and decorated metal caps. W. H. Kushnick, formerly superintendent of the Anchor Cap & Closure Corp., Long Island City, N. Y., becomes

plant manager and T. A. Hoffman, formerly assistant office manager of the Anchor Hocking Glass Corp., Lancaster, Ohio, becomes auditor.

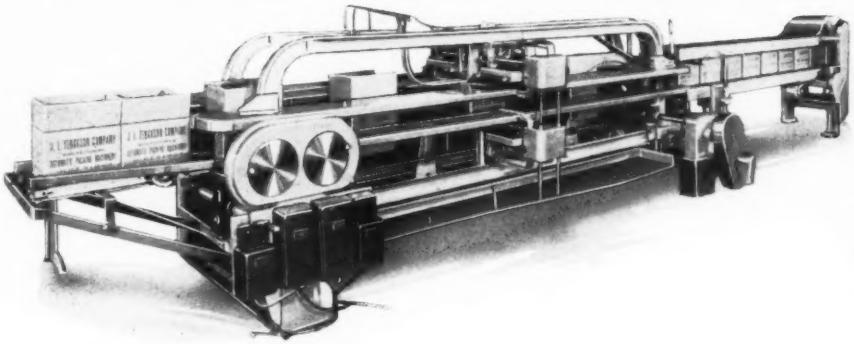
Hugh Crawford, who has been associated with Anchor on the West Coast for 17 years, becomes Pacific Coast Closure sales manager, with headquarters at the San Francisco office, 230 California Street. The Los Angeles office will continue to function with the same personnel in a new and larger office in the Transportation Building, 122 East 7th Street and the Seattle, Wash., office will continue at 1426 Fifth Avenue with the same personnel.

THE JAYPACO CO., converting division, Joe Salwen Paper Co., New York, N. Y., has announced the extension of the facilities of its combining department to permit production of custom laminations as well as to extend production of its present lines of combined boards. Facilities are now available for the combining of foils, cloths and various weights of paper stock in rolls and sheets.

THE SOCIETY OF THE PLASTICS INDUSTRY, Inc. held its fall meeting on October 13, 14 and 15 at Buckwood Inn, Shawnee-on-Delaware, Pa. More than 150 members of plastic material manufacturing companies, molding companies and plastic press machinery manufacturing companies were present. The SPI has opened permanent offices at 295 Madison Avenue, York, N. Y. For the first time, there will be a central clearing house for information on plastic materials. There will be assembled data upon sales of raw materials, finished products, sources of supply, employment opportunities and reliable information for the Government, state institutions, colleges, clubs, Chambers of Commerce and the public in general.

The Last Word IN PACKOMATIC HIGH SPEED

SHIPPING CASE SEALING MACHINES



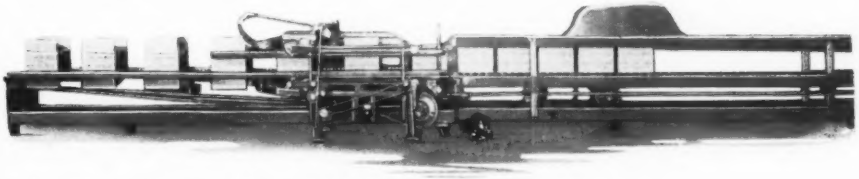
A heavy duty automatic top and bottom Gluer and Compression unit, with motorized dial push button automatic controlled horizontal and vertical adjustments. Change from one size to another in 30 to 60 seconds. Automatic self-adjusting glue skip, package plate, and flap tucker. Range of cases 10" to 30" long x 7" to 24" wide x 7" to 30" high. Efficient handling at speed up to 60 cases per minute.

PACKOMATIC AGAIN LEADS THE WAY!

We have pioneered paper shipping case sealing equipment for over fifteen years. Virtually all of the present day advance methods were developed originally by PACKOMATIC engineers. Our experience is at your disposal.

If you have a shipping case sealing problem—if you want 1940 streamlined speed in sealing your cases efficiently, with the least amount of adhesive, with positive, clean square cases—then you want PACKOMATIC Case Sealers.

We also manufacture a complete line of Packaging Machinery, Automatic Net and Gross Weight Scales, Volume Fillers, Carton Sealers, Round Can Making Equipment, etc. Whatever your packaging problem, we are at your service.



High speed automatic top and bottom Gluer with special extended carrier chain feed, three piece horizontally adjustable package plate, and with 24 ft. compression unit, all portable with ball bearing swivel casters. Handles non-test or regular paper shipping containers. Any speeds 5 to 20 cases per minute.

REPRESENTED IN ALL PRINCIPAL CITIES FROM NEW YORK TO SAN FRANCISCO
ASK FOR A PACKOMATIC MAN TO CALL. YOU WILL NOT BE OBLIGATED.

PACKOMATIC
PACKAGING MACHINERY
J. L. FERGUSON COMPANY, JOLIET, ILLINOIS

THE NEW ADDITION to the plant of W. C. Ritchie & Co., Chicago, Ill., was recently dedicated by R. H. Ritchie, president and son of the founder of the firm. Erected at a cost of $250,000, the new three-story structure adds 80,000 sq. ft. to the 175,000 sq. ft. already occupied by the company. Modern, fireproof construction with steel girders and columns is used throughout the new building. Masonry walls are of brick and the maximum amount of light is made available by the use of continuous steel windows of the factory sash type. The striking entrance is constructed of concrete and glass and sets the keynote for the functional design of the entire plant building.

THE POINT-OF-PURCHASE ADVERTISING Institute met recently with national advertisers, lithographers and mounters and finishers to select new officers and directors and to formulate its new program. The new board of nine directors are: Carleton Healy, vice president, Hiram Walker Co.; B. H. Miller, advertising manager, John B. Stetson Co.; G. L. DeBeer, advertising manager, Bauer & Black; L. L. Grisamore, Arvey Corp.; D. C. Ozmun, Chicago Cardboard Co.; George L. Rose, Mounting & Finishing Co.; George C. Kindred, Kindred, MacLean & Co.; Harrison Caner, Jr., Ketterlinus Lithograph Mfg. Co.; J. M. Wolff, Jr., Wolff Printing Co. The new officers are L. L. Grisamore, re-elected president; George C. Kindred, vice president and George L. Rose, secretary-treasurer. President Grisamore stressed again the two fundamental principles of the Institute, "The organization of the Institute is based on two interrelated thoughts. First, that in our opinion point-of-purchase advertising is the most economical and effective medium of advertising extent today. Second, that a determination and dissemination of the truths concerning point-of-purchase advertising cannot but lead to an enlarged and more intelligent use thereof."

PACKAGING INSTITUTE, INC. held its annual meeting October 10 at the Westchester Country Club, Rye, N. Y. The following officers were elected: President—Carl H. Lambelet, president of the New Jersey Machine Corp., who succeeds William M. Bristol, Jr., of the Bristol-Myers Co. Vice presidents—George R. Webber, Package Development Bureau, Standard Brands, Inc., and A. Vernon Shannon, sales manager, Westfield River Paper Co., Inc.

The following men were elected to the Board of Directors of the Institute at membership meetings of their respective divisions: Production division—K. T. Krantz, Colgate-Palmolive-Peet Co. and Howard A. Sumner, Norwich Pharmacal Co. Machinery division—Herbert H. Leonard, Consolidated Packaging Machinery Corp. and Bryant W. Langston, Samuel M. Langston Co. Supplies division—E. A. Throckmorton, Container Corp. of America; P. I. Heuisler, Jr., Maryland Glass Corp.; Stanley L. King, Monsanto Chemical Co.; James Harley Nash; P. M. Gilfillan, Shellmar Products Co. and A. Vernon Shannon, Westfield River Paper Co., Inc. Each of the three divisions of the Institute—production, machinery and supplies—has six members on the board of the Packaging Institute.

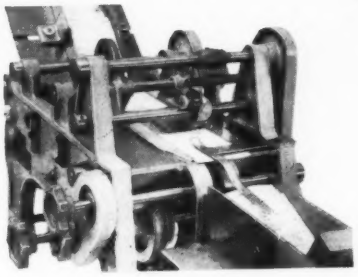
The Packaging Machinery Manufacturers Institute, which operates as the machinery division of the Packaging Institute, elected the following officers and directors: President—Carl H. Lambelet, New Jersey Machine Corp. Vice presidents—Morehead Patterson, American Machine & Foundry Co.; Charles L. Barr, F. B. Redington Co. Directors to serve for a three-year term: Lee W. Duer, Elgin Mfg. Co.; Herbert H. Leonard, Consolidated Packaging Machinery Co.; Bryant W. Langston, Samuel M. Langston Co. The supplies division held its organization meeting to elect directors and plan a program.

THE SOCIETY OF DESIGNERS FOR INDUSTRY, New York, N. Y., has elected William O'Neil, industrial designer, to the office of secretary for the coming year. Other officers of the organization are Martin Ullman, president; Frank Gianninoto, vice president and George Blow, treasurer.

DAVID FITZGERALD, formerly auditor of the plastics department of the General Electric Co., has been appointed assistant to G. H. Shill, manager of the department which has its headquarters in Pittsfield, Mass. E. H. Gabel has been appointed auditor of the plastics department, succeeding Mr. Fitzgerald.

THE STATE OF NEW YORK Department of Agriculture and Markets, Albany, N. Y., sponsored a unique packaging exhibit at the 1940 State Fair held recently at Syracuse, N. Y. The exhibit served a threefold purpose: (1) to acquaint producers with containers which were standardized by the Federal Acts of 1916 and 1928. (2) To acquaint producers with retail merchandising trends by showing them the various types of containers that are being used commercially for the marketing of fresh farm products. (3) To demonstrate that a stand containing packaged farm produce can be made to appear attractive. Several placards were presented to acquaint producers and distributors as to requirements of the laws pertaining to weights and measures and containers.

ROUNDING OUT *a complete* LABELING EQUIPMENT SERVICE!

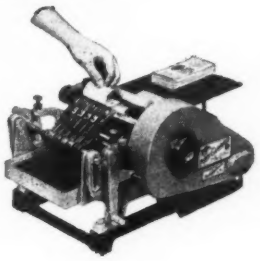


CODE-O-MATIC

Imprints code symbols or batch numbers for foods, drugs or pharmaceuticals

Here are four sturdy, dependable, proven units for every labeling problem!

"PACE-MAKER" TABLE GUMMER



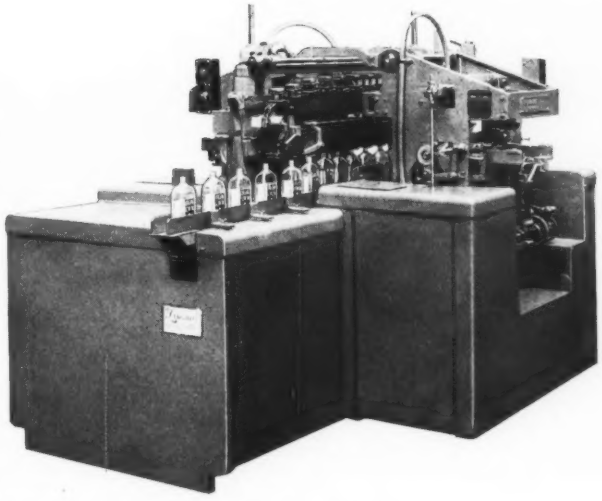
Here's a sturdy, dependable gummer, long-wearing, able to "take-it" and apply adhesive to labels as fast as nimble fingers can feed labels. Self-cleaning with micro glue-control.

Ask for Catalog!

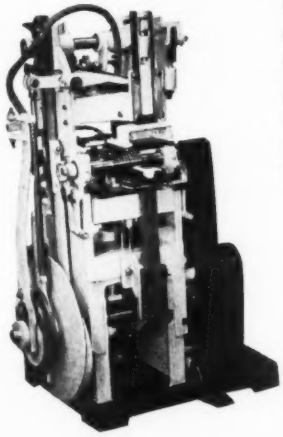
THE result of years of service to the labeling field enables us to offer a complete line of equipment for every labeling purpose. The units shown on this page have been designed to do MORE than the usual types of glue-applying, label-applying and coding. Their exclusive features have made them outstanding for use in the food, drug and pharmaceutical fields, because of their speed, accuracy and long-wearing, economical operation.

PONY OR FULLY AUTOMATIC

LABELRITE



It's the method—straight-line, quiet operation; perfect registry, absolute glue-control, and provision for handling a wide range of label and bottle sizes and shapes that makes the Labelrites so much more desirable for the most gratifying, low-cost results. Simplicity of change-overs; petty-cash cost of change parts, self-cleaning feature and "no-wiping-of-bottles;" with speeds up to 60-a-minute or more (120-a-minute and up, on fully automatics) have strongly appealed to the buyers of more than 700 Labelrites in the past 3 years! Why not look into these benefits?



Catalog details available upon request!

NEW JERSEY MACHINE CORPORATION

1600 Willow Avenue ~ Hoboken, N. J.

CHICAGO OFFICE, 549 WEST WASHINGTON BLVD.

● *Sales and Service Representatives in 12 Industrial Centres* ●

For Your Information File

Unless otherwise indicated, copies of catalogs, booklets, etc., mentioned in this department may be obtained without charge by writing to the sponsoring company at the address given.

"MARKETING OPPORTUNITIES—1940" is the title of a publication issued by the Lithographers National Assn., Inc., New York, N. Y., incorporating the addresses made at the 35th annual LNA convention in Del Monte, Calif. Contents include: "Address of Welcome," by E. H. Wadewitz, president, Western Printing & Litho. Co. and president of the Lithographers National Assn.; "Some Realistic Aspects of Collective Bargaining" by Almon E. Roth, president, San Francisco Employers' Council; "The Force of Ideas" by Lloyd E. Wilson, public relations director, Young Men's Christian Assn.; "Report of the Lithographic Technical Foundation" by R. V. Mitchell, vice president, Lithographic Technical Foundation, Inc., and president, Harris-Seybold-Potter Co., Inc.; "The Way to Look at It" by Dr. Frederic P. Woellner, professor of education, University of California; "Mars Plays with Paper" by Victor E. Hecht, vice president, Zellerbach Paper Co.; "American Business and the War" by Dr. George W. Dowrie, professor of finance, Graduate School of Business, Stanford, University.

A NEW SOUND-AND-COLOR MOTION PICTURE, "A New World Through Chemistry," has been made by the Public Relations Department of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. The film interprets, in 20 minutes of narration and ingenious photography, many of chemistry's newest developments. Nylon textile fibers and nylon hosiery, plastics, dyestuffs, "Zelan" durable water repellent, rayon and other chemical contributions to life are shown, the picture tracing their careers from the laboratory through the process of manufacture and into actual use. Part of the action was screened in Hollywood, with professional actors and actresses playing roles. "A New World Through Chemistry" was produced by Scientific Films, Inc., in full Cinecolor. The script, written by Walter Anthony, is narrated by Gayne Whitman with musical arrangements by Edward Paul. The picture is offered for club and school showing through the du Pont Company's Motion Picture Bureau. It may be borrowed either in 16-mm. size on an 800-ft. reel or 35-mm. size on a 2,000-ft. reel. There is no charge except the cost of returning the film.

THE SECURITIES AND EXCHANGE COMMISsion, Washington, D. C., recently made available the eighth of a series of supplements to the industry reports of the Survey of American Listed Corporations. The supplements cover financial operations for the 1939 fiscal year. Supplement No. 8 contains reports on 12 corporations whose business is primarily the manufacture of metal and glass containers including closures. The companies covered in Supplement No. 8 are: American Can Co., American Seal-Kap Corp. of Delaware, Anchor Hocking Glass Corp., Continental Can Co., Inc., Crown Cork & Seal Co., Inc., Crown Cork International Corp., Hazel-Atlas Glass Co., McKeesport Tin Plate Corp., Owens-Illinois Glass Co., Pacific Can Co., Standard Cap and Seal Corp., Thatcher Manufacturing Co. Financial data for the fiscal years 1934–1938 for the enterprises included in this supplement were previously released as Report No. 5, Volume 1, of the Survey of American Listed Corporations, Work Projects Administration study sponsored by the Securities and Exchange Commission.

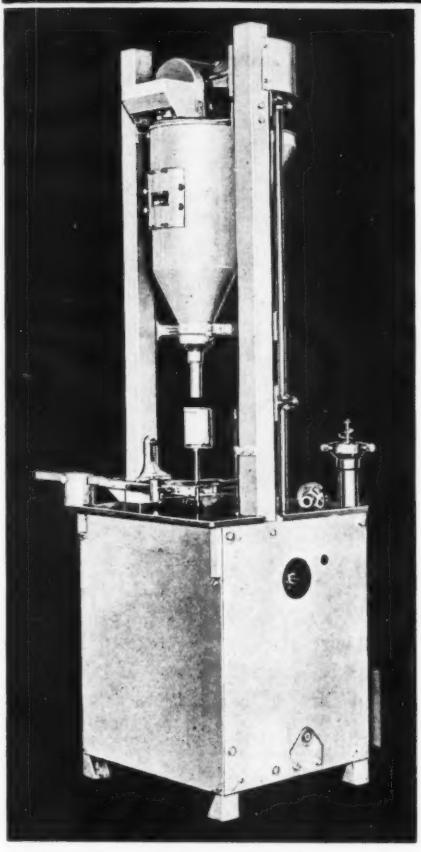
SHELLMAR PRODUCTS CO., Mount Vernon, Ohio, has issued a swatch book presenting its Spring 1941 line of holiday bands and wrappers. A wide selection of cellophane bands and wrappers, suitably decorated for St. Valentine's Day, St. Patrick's Day, Easter, Mother's Day, Anniversaries, Birthdays, etc., are incorporated in the book. Suggestions for effective use of bands and wrappers are found in the presentation book, as well as detailed price lists, size specifications, etc.

DUREZ PLASTICS & CHEMICALS, INC., North Tonawanda, N. Y., has issued a booklet, "It's a New Business Custom," which presents case histories of several companies in different industries who have adopted plastics to find the answer to sales and production problems.

ANDERSON & SONS, manufacturers of metal displays, name plates and signs, formerly located in Springfield, Mass., have recently moved to Westfield, Mass. The new plant—all on one floor—is completely equipped, it is reported, for the etching, lithographing and embossing of decorated metal work of all types.

In the article describing the buffet bowl catsup jar recently introduced by the P. J. Ritter Co., manufacture of closures was wrongly credited to the Owens-Illinois Glass Co. The closures are actually a product of The Crown Cork and Seal Co. The jars, as the article stated, are by Owens-Illinois Glass Co.

"S & S" FILLING • PACKAGING • WRAPPING EQUIPMENT



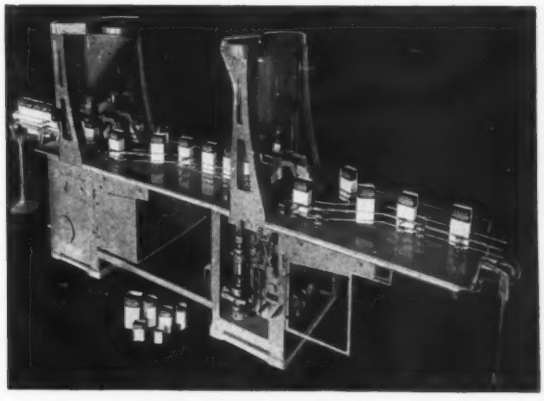
A

For Small or Large Requirements
Semi-Automatic or Fully Automatic
"SPEEDS TO SUIT YOUR NEEDS"
15—30—60—120 Packages Per Minute

For

Cakes, Crackers, Candy, Cereals, Cocoa, Cosmetics, Chemicals, Cleansers, Drugs, Desserts, Foods, Flour, Gelatin, Insecticides, Macaroni, Peanuts, Prunes, Puddings, Soap Powders, Toilet Goods, Etc.

B



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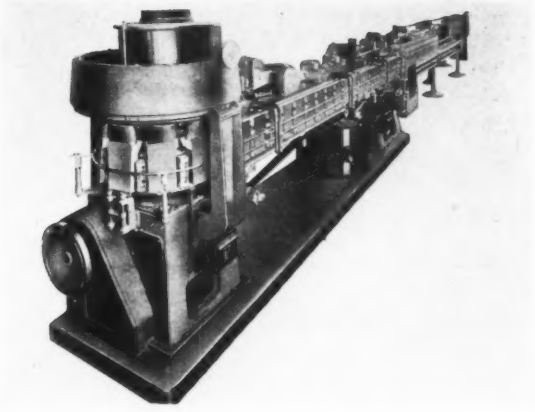

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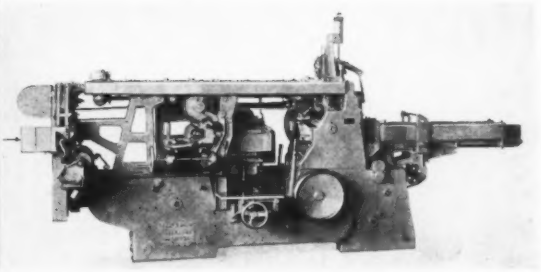


A. *UNIVERSAL FILLING MACHINE*
for Powders, Granular Products or Pastes.
15–20 Per Min.

B. *AUTOMATIC FILLING MACHINE*
Two or Four Station.
30–60–120 Per Min.

C. *CARTON FILLING & SEALING MACHINE*
15–30–60–120 Per Min.

D. *TIGHT WRAPPING MACHINE*
15–60 Per Min.

WE WILL GLADLY SEND COMPLETE INFORMATION. WRITE TO:

STOKES & SMITH Co
PACKAGING MACHINERY PAPER BOX MACHINERY
FRANKFORD, PHILADELPHIA, U. S. A.

Coffee and tea packaging

(*Continued from page 64*)

against a bright red background. Another blue ribbon award, this one given for quality appeal, went to the King Alfred Tea carton entered by Hart Food Stores.

A blue ribbon was awarded the Dannemiller Coffee Co. for its transparent 1/2-lb. Iced Tea bag.

Top honors in the family group classification went to McCormick & Co. for their entries of tea and spice cans. Each of the packages features the "Mc" trade mark above a central band, but otherwise they differ in shape, size and color. The can used for crushed red peppers, for instance, has a white background, a red top and a green band at the base, the brand insignia appearing in gold. A design showing a bright, whole red pepper has been worked out at the base of the trade mark. This particular can was awarded a blue ribbon as the best individual spice can in the competition.

This year, for the first time, combination shipping-display boxes were made a special classification. Chosen for a blue ribbon award in this group was a set of three containers used in the merchandising of the three brands of coffee packed by Francis H. Leggett & Co. As set up for counter display, the containers appear in three sets of distinctive colors which conform, in design and color, with those of the original unit packages.

A blue ribbon in the display classification was awarded the Thomas Coffee Co. for its Mokay coffee bag and combination dispensing-display rack. The striking Mokay bag is unique in several features. The design runs horizontally to permit of obtaining full display value in the self-service rack. A heat-sealed Pliofilm-lined bag is utilized—known as the Flav-O-Tainer—and a circular window above the brand name permits the consumer to see the grind she is buying.

In the envelope classification, John Sexton & Co. took the blue ribbon award for their Sexton's Special coffee container. The dark green Thermosealed envelope, containing 3 oz. of Silex coffee, is designed for the restaurant and industrial trade.

Three brown ribbon awards were made this year. Brown ribbons are given in recognition of some particular distinguishing feature of a package which makes it unique in its class. Smart & Final Co., Ltd., received a brown ribbon for their S & F brand super vacuum packed glass jar. Familex Products Co. was honored for product identification in the family group classification. The third brown ribbon was awarded First National Stores, Inc., for its Richmond brand tea carton.

Transparent packaging for toiletries

(*Continued from page 68*)

size and appearance except that they were transparent. But the customers demanded the transparent packages and carried them off in spite of salesgirls' pleas. So an all-transparent container may become necessary. In that case, there will be no speculation about the shade of powder and as the surface of cellulose acetate is admirably adapted to printing, the same information will appear against the background provided by the powder shades.

The Old Bell Jar Technique

La Cross: Schnefel Bros. were aboard the "Gone with the Wind" bandwagon with a line of Scarlett O'Hara nail enamels before the Klieg lights were dimmed. Small cylinders of cellulose acetate, in the manner of the old bell jars, were fitted over each bottle. The entire production sold out in a short time. This house has recently designed a handsome molded manicure kit which allows all the necessities of a manicure to stand upright without tipping. A cylinder of cellulose acetate fits over the cake-frosting colors and gives them depth and sparkle and provides a permanent cover that lasts as long as the preparation (see illustration 8).

Pinaud, Inc.: Another Scarlett O'Hara promotion —two toilet waters, "Flirt" and "Bittersweet"—were rebottled in flasks shaped like hoop skirts and their closures were molded from cellulose acetate into the head, waist and panniers of a Civil War belle. So that all might see the unusual ensemble, a transparent cover was fitted over it. This provided a base for printing the scent name, without marking the contents. Five thousand were ordered for fall delivery—150,000 were sold by the middle of January (see illustration 9).

Transparent Packaging for Allure

Harriet Hubbard Ayer: The Ayer Baroque soap package is an outstanding example of the adequacy of the transparent rigid container. A handsomely carved soap, of very large size, was enthroned on a green satin dais, the transparent acetate cover which fitted over the gold and green satin was edged with enclosed gold cord and the whole had the effect of the crown jewel case in the Tower of London. It retails for about $2.00 (see illustration 10).

Bourjois: A little flacon of "Mais Oui" perfume, set in the heart of lily petals on a bright blue and cherry red base, obviously is too good to be hidden. Therefore, a large cylinder of transparent acetate, decorated with hand-lettered trade names so that it looked like a gaily caparisoned merry-go-round at a carnival or like animated May dancers around a May queen, was utilized. The transparent acetate gives the effect of the printed names careening through space (see illustration 11).

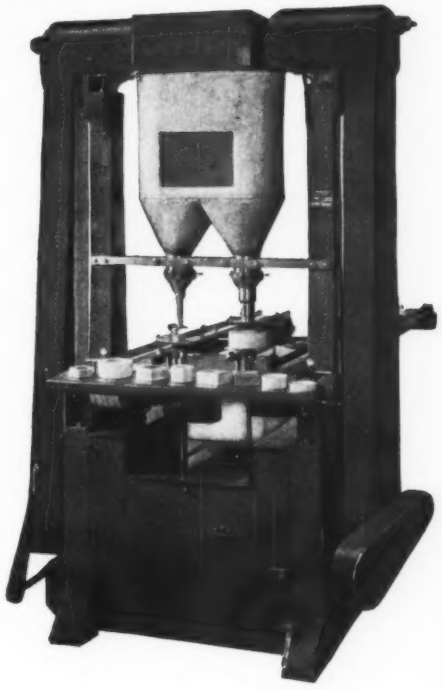
Helena Rubinstein: The popular "Apple Blossom" scent bottle is now ensconced under a white arbor intertwined with blossoms. To protect this charming ensemble, an arbor-shaped transparent acetate cover was fitted over it so all the world can see the effect (see illustration 12).

Credit: Containers fabricated by Hygienol Co., Inc. Transparent acetate sheet material by Celluloid Corp.

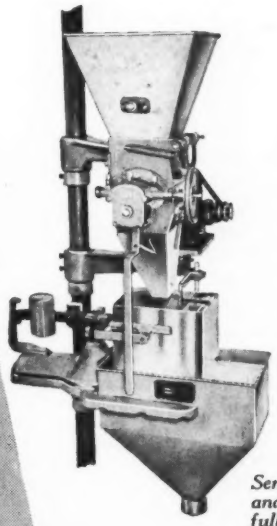
GROSS WEIGHING — NET WEIGHING

MEANS "BOND" MEANS "SCOTT"

For filling almost all types of dry products, these two names have become almost synonymous in the trade for day-in and day-out dependability and accuracy. These machines have proven themselves in plants large and small over many years, and constant repeat orders are an evidence of their fine performance.



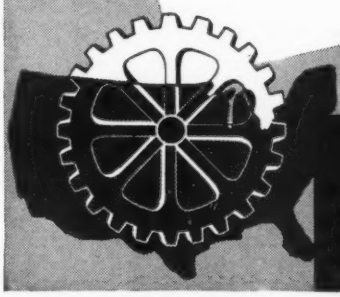
At right is our **Model MH Bond Machine.** This is a semi-automatic model and can be equipped as a volume filler, a weigher or a packer-weigher, to suit the product and the container. A production up to 50 per minute is obtainable with one operator, and weight variation is negligible. We also manufacture other semi- and fully-automatic models to suit customers' production requirements, all guaranteeing the same close accuracy and practically dustless operation.
The Bond machines are particularly suited for handling: face powder, talcum, flour, soap powder, tooth powder, cocoa, etc.



← Scott Net Weigher and Feeder.

The Net Weigher comes in three models to suit the weight range to be handled, and we have several models of Feeders for a wide variety of products. Free-flowing materials such as steel-cut coffee, rice, peas, tapioca, etc., can be run on the Weigher by gravity feed. For non-free-flowing products the correct model Power Feeder can be added, thus making the machine capable of handling pulverized coffee, spices, tea, soap flakes, etc. Speeds up to 35 per minute are obtainable with one operator, and closest accuracy is maintained.

Send us particulars on your job and we will gladly submit full details on the most suitable machine.



U. S. AUTOMATIC *Box Machinery Co. Inc.*

Owning and Operating

NATIONAL PACKAGING MACHINERY CO. • CARTONING MACHINERY CORP.

18 ARBORETUM ROAD, ROSLINDALE, BOSTON, MASS.

Branch Offices: NEW YORK CHICAGO, ILL.

War packaging in Britain

(*Continued from page 33*)

tainer." Thus inserts are banned. The clause is modified, however, by the statement, "*Advertising matter shall not be taken as including instructions for the use of the article.*" The exact line between advertising leaflets and instruction leaflets has not been clearly defined and will, no doubt, be worked out by the Ministry of Supply on the basis of the individual problems of each package using industry.

A further clause prohibits the "*Affixing to any wrapping or packing or carton or container any advertising matter the area of which exceeds 20 sq. in.*" This clause not only checks the use of decorative covering papers, but forbids the use of labels of an area greater than the 20 sq. in. limit (see section on labels, page 97).

"*No person shall, in connection with or for the purposes of any sale by retail, wrap or pack with paper any article which does not reasonably require any such packing or wrapping for its protection.*" This clause would seem to affect not merely retailers' wrapping papers, but manufacturer-supplied Christmas wrappings on some containers.

"*No person shall, in connection with or for the purposes of any sale by retail, use in wrapping or packing of any article any greater quantity of paper wrapping or packing than is reasonably required for the protection of the article (including such as is reasonably required for its safe transit if the article is to be sent by post or otherwise dispatched to or to the order of the customer).*" "Shelf Appeal" interprets this clause as a limitation upon the extravagant use of wrapping papers where such papers are admittedly necessary for hygienic reasons (as with meat, fish, etc.). It is interesting to note that the previously cited clauses apply only to domestic packaging. A specific exception is made for articles produced for export. This exception is in line with the necessary British drive for export trade as a means of building up foreign exchange balances to permit the purchase of essential war materials and supplies. Obviously the British are willing to exchange portions of their limited stocks of paper supplies for more essential commodities where it is necessary to utilize such materials in order to effect export sales.

Carton Production

Carton production is rigidly controlled. Under Paper Control order No. 14, carton manufacturers are permitted to convert carton boards held in stock at the time of the issuance of this order (the latter part of May). Licenses for conversion must be obtained from the Ministry of Supply if material is not already in stock at the carton plant or if material is in stock, but had been imported directly by the converter. In addition, even before the issuance of this order, it had been necessary to obtain a license before any paper or board could be imported. Thus, at the present time, a converter must make two separate applications before he can execute an order.

An application must first be made for the importation of the material, the fullest details being given of the use to which it is to be put—with information about any savings that have been effected by comparison with the method of packaging formerly used for the product concerned.

Assuming that eventually the importation of the board is permitted, currency is available to pay for it, shipping space is found and it reaches the printer—he then has to make a second application, for a license to convert it, for the purpose which he has already fully described in his original application. Such licenses are issued by the Paper Controller offices of the Ministry of Supply only where the articles to be produced are for purposes of national importance.

"Shelf Appeal" reports a distinct trend toward a reduction in the volume of packaging materials used and a reduction also in quality, since shortage is far less acute among the cheaper materials. New designs are being evolved to make the best use of chipboard and the like. Such designs are planned to be effective even when printed in a single color on the poorest quality board.

Philip M. Robinson, directory of Robinson & Sons Ltd., is quoted as follows: "The carton trade has reversed its engines—instead of pointing out the advantages of cartons over other forms of packing, we are now telling our customers that cartons are largely unnecessary. Our hope is that if these good deeds are unnoticed on earth, they may be recorded in heaven." Chart 1 indicates a series of economies now being effected on a wide scale throughout British industry.

A number of firms have entered into extensive schemes to secure the return of their containers, most notable among these being the soap companies which, as in this country, are among the larger users of corrugated cases. Thomas Hedley & Co. Ltd. have widely publicized two separate but parallel systems of collection. The trade has been informed of these systems through full-page advertisements in publications reaching retailers. "The first system is for the dealer himself to save our outer cases, to make them up in bundles of not less than 12 and not more than 30 (folded flat) and then to hand the bundles to any carrier. We supply the dealer with a special label, already carrying our name and address and we ask him to fill in his own name and address.

"On receipt of the cases, we credit the dealer on his invoice at the rate of 2*d.* per case, provided the cases are in good, usable condition when we get them.

"The second system is to have our own salesmen collect the cases from the dealers on whom they call, paying at the time of the call 2*d.* in cash for each undamaged case collected. The salesmen despatch these cases to us by goods train, making them up into bundles of anything from 12 to 30 cases.

"The reason for these particular limits is that, with our type of outer case, 12 is the minimum economic figure that can be despatched at a time, and 30 is

about the maximum from a weight and bulk viewpoint. The limits would obviously differ according to the size of outer case being returned.

"A disadvantage of the first system seems to be that comparatively few dealers take the trouble to return outer cases, even when credited at the rate of 2*d*. each. That is why we believe the second system will get many more cases returned to us.

"The danger of the second system, however, is that it tends to detract from the salesman's selling time. We have only been operating the second system for a short time and cannot yet tell how effective it is going to be in the future.

"We considered the idea of charging the customer for the cases on the invoice and refunding this amount by the issue of a credit when the cases were returned to us. We came to the conclusion, however, that this would lead to a good deal more trouble than the results would justify."

A two-fold scheme of collection similar to Hedley's is used by A. G. Spalding & Bros., Ltd., sporting goods manufacturers, who ask retailers to save golf and tennis ball boxes and badminton shuttle containers for collection by the company's commercial travelers. As an alternative, Spalding refunds crate charges if the boxes are returned directly to the factory, suitably packed to ensure their re-usability on arriving.

Companies using non-collapsible shipping containers have found greater difficulty in securing returns. One company gives its dealers an allowance where shipping containers and individual cartons are returned in usable condition, the individual cartons being replaced into their original position in the shipping containers.

Some form of recompense for the dealer or consumer has been found essential in most schemes intended to bring containers back to the packager. The Biscuit Manufacturers' Defence Committee pays prices ranging up to 1*s*. for returned containers. Grocers are empowered by the Committee to repurchase, from the public, biscuit tins of either plain or fancy patterns.

The effort has even extended to the cigarette industry where manufacturers have requested retailers to ask each customer buying a box of cigarettes to return, on the spot, the new container—presumably placing the cigarettes in an old package or in a cigarette case.

Efforts promising a high degree of success are being made by industries which do not come into direct contact with the public. To facilitate the distribution of lubricating oil, the Secretary for Petroleum has requested that, where storage facilities exist, all lubricating oil barrels and drums should be emptied at once and returned to the oil companies.

Labels

The Paper Control order affecting labels reads: "No person shall affix to any wrapping or packing or carton or

HYCOLOID
AND
CLEARSITE
CONTAINERS
80% lighter than glass
Seamless and unbreakable
Labels imprinted directly on container
Any color or color combination —
transparent or opaque
Drop us a line or phone for samples,
quotations, information.
FIRST IN CELLUPLASTICS
HYCOLOID - CLEARSITE
CELLUPLASTIC CORPORATION
Formerly HYGIENIC TUBE & CONTAINER CORP.
Executive Offices and Factory:
46 Avenue L—Newark, N. J. Market 2-4544
N. Y. Display Office: 626 Fifth Ave., New York City

container any advertising matter the area of which exceeds 20 sq. in." This 20 sq. in. limit has been generally accepted by canners and label printers are reported to be working on new designs to conform to the size limit. Two alternative types are available. The label can be designed as a long, narrow band extending completely around the can with vertical dimensions of 2 in. or less, depending upon the can perimeter.

The alternative type would resemble the display face of old can labels and would measure some 4 in. by 5 in. While this latter type is believed more desirable from a recognition standpoint, it is undesirable, in most instances, from a production standpoint. This is so because the labeling machines used by most canners are designed for applying labels whose ends overlap. They can be adjusted to apply the narrow band type, but cannot be easily adjusted to spot label to the can. Difficulties are also had in securing a proper and effective paper-to-tin adhesion.

The new regulation has stirred a deep controversy among designers. Manufacturers' first impulses were to make the new labels miniature reproductions of the old ones. Mature second thought, however, has led the majority of manufacturers to a simplification of label design more in keeping with the new shape.

The strict limitation on size of labels has led some manufacturers to seek improvements in design. A number have turned to the use of heavier labels of the seal type as a means of conveying a quality atmosphere. Difficulty, however, is anticipated with the Paper Control authorities wherever such changeover results in the use of scarce materials.

Waxed Containers

As these containers are made from waxed paper, the paper shortage presents problems for their manufacturers, as for many other package suppliers. Many new users have, however, gone over to waxed containers since the outbreak of war—especially as substitutes for metal or glass. They have been helped to get supplies by two important factors:

1. Manufacturers of waxed containers rank high on the Ministry of Supply's priority list because it is realized that such containers are essential to the food industry.

2. There has been a falling-off in demand for waxed containers for cream—which formerly took a large proportion of the total output—because cream is expensive, inclined to be regarded as a luxury.

Straight-sided and conical containers are made. Most new users have chosen the former (a) because it hasn't such a "dairy" look about it, (b) because its shape often enables the same filling methods to be employed as have been previously employed with straight-sided glass or metal containers.

Box Cover Papers

No decision has yet been forthcoming as to whether or not private design papers are forbidden by the clause in the Paper Control orders which bans advertising matter exceeding 20 sq. in. The clause banning wrappings of a quantity greater than is reasonably required for protection of the article might also apply here, although no decision on this particular point has as yet been reported.

Users of stock design fancy papers have not yet run into difficulties, since producers have ample stock and sale has not been restricted by a license system. Existing stocks, however, will not last indefinitely. Imported stocks are not likely to be sanctioned. Further domestic British production is likewise extremely unlikely, since it would be difficult to convince the authorities that such papers serve a protective purpose under the meaning of the regulations. As an economy measure, some manufacturers have recently substituted wall papers for box papers. This would hardly seem, however, to afford a way out for industry at large, since a ban hitting box papers would apply, with equal severity, to the wall paper substitute.

Carrying Tape

One interesting development, designed to save paper and string, has been the introduction of a combined sealing and carrying tape. Each "carrier" of tape consists of a broad strip of gummed paper tape, slotted, and "interwoven" with a strip of raffia tape which is narrower and longer—long enough to form a loop by which the parcel to which it is attached can be carried. The two tapes are supplied in roll form, to fit a dispensing machine which automatically delivers the right lengths of both.

The carrier measures 9 in. by $1^1/_2$ in., and it can be used on any object that is not too bulky, not only on parcels, but on packages whose shape would otherwise make them inconvenient for carrying alone, i.e., round tins. The carrier tape is, in fact, claimed to be the only practicable attachment for such a shape, as neither string nor ordinary tape could easily be applied to anything round.

As the area of each carrier is less than 20 sq. in., it is not banned by the new regulations affecting labels which bear "advertising matter," but can be printed with a name, address and slogan or, if desired, with advertisement copy.

Where wrapping cannot be altogether avoided by its use, it still gives a considerable saving of paper. This is explained by the method which a shop assistant normally uses—placing the article to be wrapped diagonally in the center of the paper and then wrapping crosswise. That method uses 30 to 40 per cent more paper than wrapping with the edges of the article parallel to the edges of the paper—the method utilized when the carrier tape is employed.

Powder Boxes

Powder boxes made from heavy grades of board are reported to be still in use, but their further availability is not anticipated. Glass and plastics are reported as possible alternatives, but both of these materials are likewise restricted as to availability and a clear solu-

tion of the problem confronting powder manufacturers is not immediately in sight.

Egg Boxes

Paper egg boxes are today being made from waste materials and are reported to be still available, although falling off. Curiously, paper boxes and partitions are replacing the wooden containers which were formerly favored in Great Britain in this field. Customers, who would not look at cardboard cases until they were compelled to turn to them owing to timber shortage, are reported to have found much satisfaction in the use of the new container and a decided shift in preference, after hostilities cease, is anticipated.

Transparent Films

Transparent films of the regenerated cellulose type seem to be available and the Government encourages their use as replacement for opaque containers which use a larger quantity of raw material. Thus one of the new users of regenerated cellulose film is a company wrapping fertilizer bricks. The compressed fertilizer cuts down shipping space by 75 per cent and is heat-sealed in transparent cellulose sheets. Thus the use of jute, linen or thick paper bags has been eliminated in this particular instance.

Plastics

A number of factors affect the availability of plastics and no general statements are therefore possible. Acetate plastic materials are practically unobtainable for the production of packages, as producers of these materials are working 24 hours a day on Government orders. Phenolic molding materials, on the other hand, are available and companies who had previously used such materials for packages, package parts and closures are experiencing no particular difficulties in securing supplies. However, shortages of mold steel and the demand made by armament plants upon the labor supply have made the production of molds for new plastic packages come to a virtual standstill.

Thus the choice for most manufacturers is limited, by practical considerations, to the stock designs marketed by a number of molders. Molded closures, and such small packages as lipstick holders, rouge boxes, etc., are still available in quantity and to a considerable extent are taking the place of metal closures, especially of aluminum.

Tinplate

The legal position of the tinplate container was, for some time, in doubt in Great Britain. The Ministry of Supply finally clarified the situation by an order officially known as Control of Tins and Cans, order No. 1. This prohibits the use of tinplate and sheet in the manufacture of containers for a number of commodities. For others, it restricts the use of such containers to types and sizes specified in a standard schedule.

For example, returnable 7-lb. tins for cocoa are the only metal containers permitted and returnable 4-lb.

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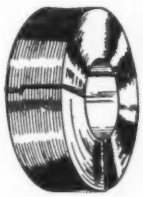

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tins are the only metal containers permitted for coffee. Metal containers are banned for cat food, dog food, bird food, face powder, manicure and shampoo powders, biscuits, toffees, boiled sweets and for window or counter displays. As usual, the order does not affect packaging for export or for Government purposes.

The effect of the order is not immediately apparent in all fields. Companies having supplies on hand are permitted to consume these supplies. Thus "Shelf Appeal" reports the director of one medicinal house reporting a stock of containers ample for two years' normal sales. It seems that the labor of converting such containers back to raw material for armament uses is greater than the value of such raw material at the present time. For this reason, existing stocks are exempted from the order.

Prior to the issuance of the Control order, a curious phenomenon had taken place in that some firms were shifting to the use of tinplate containers, while others shifted away. The new users were principally firms who had previously used aluminum and who must have a metal container of some sort. On the other hand, a number of firms found it possible to use fibre cans or paper boxes or other package types. Biscuit makers had started to shift from paper to metal when the Paper Control orders were put into operation late in May. The July metal container restrictions arrested this process virtually at birth. The exact direction of future shifts can hardly be predicted.

British metal container restrictions are not induced solely by the question of the availability of tin. The availability of steel is as great or even a greater factor. This is so because of Britain's smelter facilities which are very extensive and because the submarine blockade has not cut off ore imports. The situation may be affected by anticipated possibilities in the Pacific, but to date Britain's tin production and consumption have mounted substantially over pre-war figures. In the spring of 1939, consumption averaged 1,921 tons a month. In the first month of war, it shot up by more than 1,000 tons. In April of 1939, 297 tinplate mills were working. In April of 1940, the number had increased to 340. In December of 1939, tin box makers had unfilled orders on their books for more than a million boxes, a record figure up to that time. By the beginning of June, the unfilled orders had risen to approximately $8^1/_4$ million.

Aluminum

The British Government is taking the entire production of aluminum and has banned the importation of supplies from abroad. Thus firms that formerly used aluminum in packaging have been forced to find substitutes. This has vitally affected users of aluminum collapsible tubes. Other types of collapsible tubes are reported to be still available.

Aluminum closures for milk bottles—widely used in Britain—are not being made available for future use, although some dairies are still using existing stocks. The changeover has been made more palatable to dairies by the institution of a scheme making bottle caps returnable. One dairy reports a recovery of 60 per cent of all caps. The average response has been only 30 per cent. Changeover from aluminum bottle caps to other types is particularly difficult in view of the extensive specialized machinery installations which have been made for cap application. A number of other types are found practicable, as has been proved by their use in the United States, and British industry will, no doubt, find a way of adapting itself to this difficulty.

Aluminum foil is being replaced largely by paper and a tin-sprayed paper coating which has been adopted both for cigarettes and chocolates among other products. The paper is similar in appearance to, though slightly duller than, embossed paper-backed foil. It is available in light and heavy weights. Most users of foil are attempting to dispense with the material entirely. Thus a general agreement has been entered upon by all cigarette manufacturers to dispense with all forms of inner wrappings.

Pottery

War has given a fillip to the pottery trades which utilize domestic materials and which do not require the same types of skilled labor demanded by the war materials industries. A number of new developments have been made which not only change the present picture, but bid fair to give pottery containers a future position far better than that which they enjoyed up to the time of Britain's entry into the war.

Thus Josiah Wedgwood & Sons Ltd. have produced a line of jars accurately threaded to take metal or plastic closures and designed for the packaging of ointments, creams, cosmetics and other products previously marketed in opal glass jars. The new jars can be made with straight or tapered sides. A number of stock shapes are already available and individual designs can be produced where necessary. Further individuality can be obtained—even when stock designs are used—by surface decoration, applied either over or under the glaze. Decalcomania transfers are most widely used for decorative purpose.

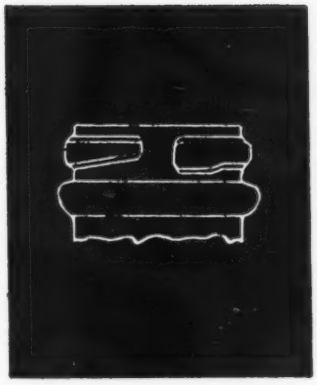
The new line of jars is priced more than 30 per cent higher than the pre-war price of opal glass jars. These latter have, however, risen in price at approximately the same percentage and the two containers are therefore at present in a competitive price position.

Much work is being done at present in the development of bottles and jugs of pottery with similar closure possibilities.

Glassware

The glass industry, while working at full blast, is not in a position to meet demands. This is particularly true because Czechoslovakia, Germany and France were big suppliers in these lines prior to the war. Few manufacturers are in a position to consider a new business. On repeat business, delivery dates are not to be considered as contractual promises and are generally made a long way ahead. Manufacturers have reduced the

STANDARDIZED MATERIALS INDEX



C.161

Glass Container Closure Finish

G.C.A. No. 120. A two-lug Amerseal A. S. (angle straight) finish used on neck size from 17 mm. to 40 mm. inclusive. A four-lug type, known as G.C.A. No. 140, is available for sizes from 43 mm. to 96 mm. inclusive. A six-lug type, G.C.A. No. 160, is available for the 108 mm. and 120 mm. finishes.

C.162

(See also G.161)

Glass Container Closure Finish

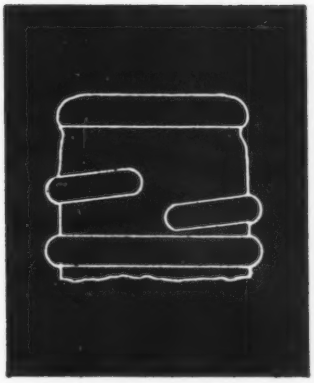
An optical variation of the G.C.A. No. 120 finish, known as the cam-off stop finish.

C.163

(See also G.161)

Glass Container Closure Finish

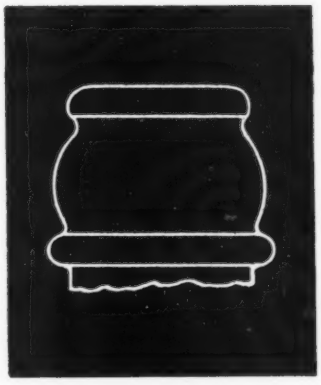
An optional variation of the G.C.A. No. 120 finish, known as the rib stop finish.



C.164

Glass Container Closure Finish

G.C.A. No. 200. A condiment finish consisting of a combination Goldy crown and screw cap.



C.165

Glass Container Closure Finish

G.C.A. No. 250. Also a condiment finish consisting of a Goldy crown and friction cap. G.C.A. Nos. 225, 235, 275 and 285 (not illustrated) are also available in the condiment finish series.

C.166

Glass Container Closure Finish

G.C.A. No. 300. All-glass sprinkler top.

C.167

Glass Container Closure Finish

G.C.A. No. 310. All-glass sprinkler top. Drain back or concave style with sealing ring.

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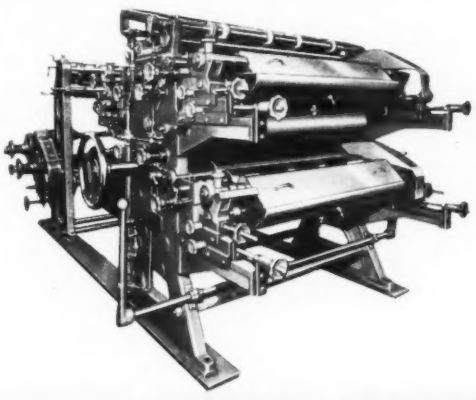

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number of stock designs offered the trade to enable production to be increased by avoiding shutdown for changeover from one pattern to another. This is particularly true on the automatically produced food and drug containers. Perfume and other fancy bottles produced on semi-automatic machines are still available in a full range of designs for old customers.

Packaging under the Axis

(*Continued from page 35*)

(chiefly imported) in 1937, compared with 25 per cent in 1936. Eighteen per cent of the output was furnished by the detinning of tinplate scrap and the remainder was obtained from ashes, residues and alloy scrap.

For lessening the shortage of tinplate, Germany has resorted to various measures, including intensified restrictions upon consumption of tin for purposes adequately served by other substitute materials, intensified reclamation of tin from tin cans and other old and waste materials, increased use of other forms of packing of food and other products, such as glass, black-plate, impregnated cardboard, etc., and developing distribution of frosted foods in replacement of canned foods.

Germany has been able to relieve its wartime food packing difficulties, to a certain extent, by the development of a new type of can made from black-(untinned) plate, rendered corrosion-proof by interior coating with a film of phosphate applied by the well-known Bonder phosphate process, followed by application of a coating of synthetic resin lacquer. While cans made of this specially treated black-plate are suitable for packing certain food products and are reported to be in increasing use, they are not suitable for packing fruits and other acid-containing foods owing to the poor resistance of the interior surface film of the can to the chemical action of the acid-contents.

Instead of being soldered, the new type of can is welded, enabling a further saving of two per cent in can material. Special automatic machinery has been developed for achieving the welding in an efficient manner.

By means of the Bonder process, a thin, tight and uniform phosphate film is placed upon the iron sheet in two or three minutes by immersion in a special phosphate bath. The entire production process requires approximately 30 minutes.

The new type of tin-less can container is reported to be suitable for packing all kinds of food products, such as meats and vegetables, except acid-containing products like fruits. However, it is believed in Germany that it can be rendered suitable for fruits also by the application to the inner surfaces of the container of a special acid-resisting lacquer film.

At all events, it is believed that the new food container offers possibilities for dispensing with tinplate to a considerable extent for the manufacture of conserved food containers. Since the bulk of Germany's consumption of tin is required for the manufacture of tin cans, development of the manufacture of the new type of tin-less containers upon a large commercial scale will contribute to decreasing the nation's present heavy dependence upon foreign sources for tin metal.

The new type of tin-less can offers the further advantage of enabling the use of band steel of Thomas quality instead of Martin steel usually used for making ordinary tinplate for can containers. This is a favorable factor since Germany has a larger production of Thomas than of Martin steel. The use of the harder steel also enables the use of thinner sheets and therefore achieves a saving in consumption of steel.

Large-scale experimental plants are reported to have established the practicality of the new tin-less type of can container and it is stated that plans have been formulated for the development of production of the new metal container upon a large commercial scale.

Germany has been conducting intensive research work in recent years looking to the development of a tin-less container for packing conserved food products. For a time, emphasis was placed especially upon developing a plastic container. While some success has been achieved in developing plastic container tubes for packing certain types of creams, pastes, etc., it has proved impossible thus far to develop a plastic container for packing food products which would be acceptable in substitution for tin cans.

As a result of more advanced intensive research work, a new type of tin-less can has been developed made from steel sheet to which a corrosion-proof inner film has been applied by electrochemical means which is said to overcome deficiencies of phosphate and lacquer-coated black-plate cans. This improved type of can is reported to be a suitable substitute for cans made of ordinary tinplate for packing fruits and other acid-containing conserved foods, as well as condensed milk, meat, sausage, vegetables, etc.

The new type of black-plate can is provided with a special kind of metal which is welded into the bottom of the can. When filled with the food contents, this metal, incorporating iron with lowest possible content of carbon, acts as electrical pole or anode, while the wall of the steel-sheet can serves as cathode and the contents of the can as electrolyte. Under this method, corrosion of the can walls is prevented by hydrogen or oxygen acting as reducing agent. When the can is sealed, the cell which is thus created causes a disintegration of the water in the can's contents and the walls of the can become coated with hydrogen at all points where iron is exposed or may become exposed through cracking, bending, etc., of the inner lacquer coating. The accumulation of oxygen on the can wall is enabled by a specially made pole-pin incorporated in the bottom of the can.

It is stated that the electrolytic development of oxygen in the closed can also presents the advantages of causing further subsequent hardening of the lacquer lining of the can as well as improvement in state of the food contents. The protective film of hydrogen or

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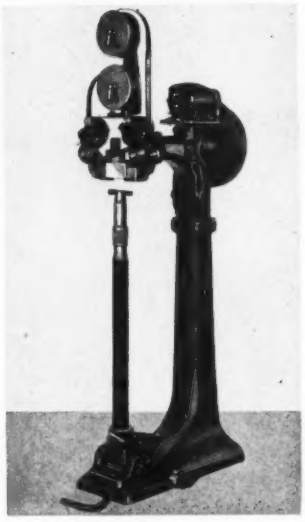

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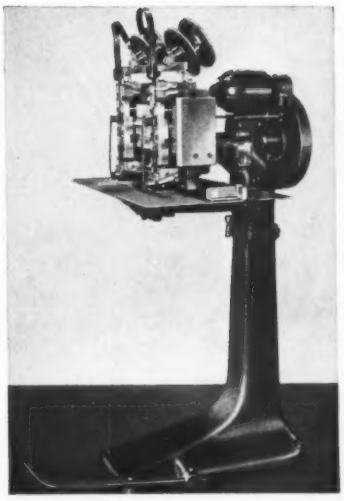

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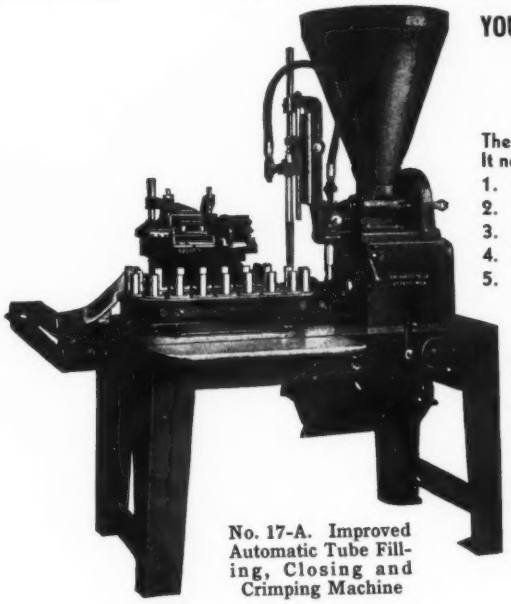

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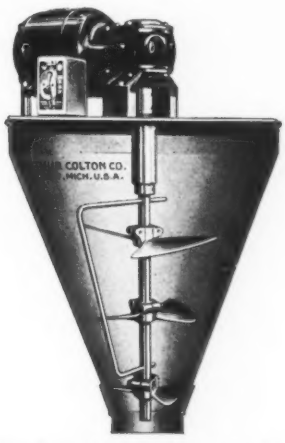

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oxygen continues firmly to adhere to the can wall after leaving the packing plant, since it does not become unloosened through transportation, jarring, etc.

Research work is now in progress directed to achieving further improvement of this method of packing food in tin-less metal containers so that the wall of the can will be rendered fully passive against chemical changes of all kinds.

The electrical welding together of the can must take place immediately upon the can being filled and the contents must be removed immediately following the opening of the can. Re-use of cans is not possible since rapid corrosion develops immediately upon the opening of the can.

Plastic Collapsible Tubes

War conditions have caused a considerable intensification of research work in Germany looking to the development of a suitable container-tube, made of plastic material, in replacement of metal tubes heretofore generally used for packing tooth pastes, creams, cosmetics, polishes and various other products which are marketed in paste form.

Under application of official autarchic regulations, Germany has already achieved considerable progress in shifting the base of its container-tube manufacture from lead-tin to aluminum. Until as recently as 1936, only one-twentieth of Germany's container-tube production consisted of the new aluminum type, but since then, compulsory decrees have forced a much greater shift until today the greater part of the national container-tube output is made of aluminum.

The use of aluminum was fostered especially because of the status of aluminum as a domestic metal, notwithstanding that the requisite raw material, bauxite, from which it is obtained, must be imported from abroad. However, the cost of the bauxite is reported to account for only a minor share, of around 7 per cent, of the total aluminum production costs. On the other hand, Germany is dependent upon foreign sources for virtually all of its tin and the greater part of its lead requirements. The conversion to aluminum thus represented a considerable saving of foreign exchange, otherwise required for importing tin and lead.

Wartime conditions have introduced a new phase in the container-tube production, for whereas formerly the use of aluminum was urged because of its abundant supply, aluminum has now become an increasingly scarce metal in Germany, due to heavily increased requirements for military purposes and it has been found necessary to impose restrictions upon the consumption of aluminum for numerous purposes. The difficulties of securing adequate supplies of aluminum have served to intensify the efforts of various industrial groups, including container-tube manufacturers, chemical companies, as well as manufacturers using tubes for marketing their products, to develop a suitable type of tube made of plastic material for replacing metal tubes.

Germany has an immense consumption of container-tubes, entitling it to rank second only to the United States and it is estimated that Germany's annual requirements amount to four to five tubes per capita, or a total of between 300 and 400 million tubes for all of Greater Germany. Although trade restrictions have reduced the use of container-tubes since the outbreak of war for various purposes and especially for packing products of the more luxury class like shaving cream, various types of cosmetics, etc., at the same time requirements for other purposes, especially for use by the military services, have increased, so that the nation's total consumption of container-tubes has continued at very high levels.

Aside from tubes made from pure drawn-aluminum, Germany's metal tube production includes a considerable volume of tubes made of wrapped aluminum foil. The shift from lead-tin to aluminum tubes, while beneficial to the national economy as a whole, involved heavy capital investments on the part of tube manufacturers which normally could be amortized only over a period of years. Any further shift in raw material basis of tube manufacture would entail still further heavy capital investments without an opportunity to earn profits from capital recently invested in new equipment for producing aluminum tubes.

The chief metal substitute now used in Germany for manufacturing container-tubes is impregnated paper of multiple-layers with fabric or metal inserts, synthetic resin (plastic) caps and metal base. Purely plastic tubes have been developed for restricted uses, notably small seamless acetyl-cellulose tubes for containing small amounts of gasoline and perfumery. One of the main technical difficulties in developing the plastic tube has been in the satisfactory joining of the head onto the cylinder body of the tube and in closing the cylinder at the base. Caps made of plastic materials are now generally used for all container-tubes made in Germany and more recently the use of zinc has been established for the tube base.

Available information indicates that the manufacture of collapsible container-tubes made of plastic materials has now been placed upon a large-scale commercial production basis in Germany, following many months and even years of research work.

A new concern, known as the Hafta-Kunststoffgesellschaft Dr. Hubner & Co. ("Hafta Plastics Dr. Hubner & Co."), with headquarters in Berlin, has been formed for developing production of "Hafta" plastic container-tubes upon a large scale. It is reported that this concern will initiate its production with an output of around one million tubes monthly with prospects of volume being increased as the new enterprise becomes better established.

The "Hafta" container-tubes are in two pieces and consist of multiple plastic layers with a cellophane base. The tubes are provided with customary caps made of synthetic resin.

Although the "Hafta" tubes were technically perfected some two years ago, large-scale production has been retarded by the need for developing suitable machinery for enabling their manufacture upon a

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mechanical basis, with resultant possibilities for mass production, increased manufacturing efficiency, reduced production costs, etc. In fact, the tubes have been in commercial use, upon a retarded scale, for some time and are reported to have proved entirely satisfactory for packing certain kinds of goods, but development of output has been hampered by the necessity, until now, of producing the tubes largely by slow and costly manual methods. It is reported that machinery has been developed enabling manufacture of the plastic tubes upon a mass production basis and now that this machinery has been installed, commercial production can be started.

Intensified efforts have been put forth in Germany, since the outbreak of war, for developing container-tubes made of materials other than metals, owing to the shortage of metals customarily used in the manufacture of these tubes, such as aluminum, tin, lead, etc. Although the collapsible tube industry has been largely converted to the use of aluminum instead of lead-tin, and aluminum is produced upon an extensive scale in Germany, nevertheless, owing to the unusual requirements for aluminum created by wartime conditions, needs of the aircraft industry, etc., and the role which aluminum is playing as a substitute for other metals, copper, tin, nickel, etc., usually imported from abroad, there has been a considerable scarcity even of aluminum, necessitating utmost economy in its use.

"Hafta" plastic tubes are especially useful in very large sizes such as are used for packing industrial materials, oils, fats, chemical compositions, etc., where savings in metal required for metal tubes are especially large. The plastic tubes have been found very suitable for packing cosmetic preparations, face creams, ointments, etc.

Mechanization of the production procedure was expected to reduce the cost of producing "Hafta" plastic tubes to levels under those prevailing for customary metal tubes.

The war has given a considerable impetus to the entire subject of container-tubes made of plastic materials other than metals and numerous companies have intensified their research efforts in this interesting, and, for the national economy, important sphere. It is reported that another concern, with the name "Yatar Tuben C.m.b.h.," with headquarters in Berlin, was also recently formed for undertaking the manufacture of plastic tubes. The tubes of this concern are reported to be made in one piece and to incorporate, as principal component materials, cellulose and metal sheet. Although data regarding the prospective volume of output of this concern are lacking, the small amount of the concern's present capitalization suggests that production, at the beginning at least, will be somewhat limited.

One of the most promising types of plastic tubes thus far developed in Germany appears to be made of the mixed polymer, vinyl chloride and one consisting of multiple layers of cellophane base. Vinyl chloride has already been found an excellent substitute for lead for mantles or sheathings for wire cables and is also used for lining tubes as protection against the chemical action of the contents of tubes. Both of these types of tubes have been found useful for various packing purposes, but they labor under the serious disadvantage of high cost, due chiefly to the necessity of manufacturing them mainly by hand labor. An important problem in connection with the commercial development of these plastic tubes, therefore, is the perfection of suitable automatic machinery for enabling their manufacture at low cost upon a factory-mass-production basis. It would appear that production of these plastic tubes, upon a really large commercial scale, will depend, in the first place, upon the development of suitable automatic manufacturing equipment for converting their manufacture from a hand to mechanical basis.

Italian Tin Restrictions

Under a recent decision of the General Italian Commissariat for War Manufactures, severe restrictions upon the use of tinplate have been imposed upon numerous industries, reflecting the extreme shortage of this metal which is rapidly developing in Italy since the British blockade has been fully applied following the entrance of Italy into the war.

On all containers for kerosene, gasoline, mineral oils and lubricating greases, tin must be replaced by lead-coated steel sheets. On all containers for shoe polishes and floor waxes, tin may no longer be used. Three-fourths of the replacement must be by sheet steel and one-fourth may be by lead-coated sheet steel. Tin is prohibited for containers for cookies and sweets in general and for containers for meat-extract cubes and similar products. Zinc-coated sheet steel must replace tin on containers for miscellaneous items, such as motion picture and photographic films, artists' oil paints, drawing equipment, tool parts, cartridges, glasses, etc. Tin must be eliminated from all containers for pharmaceutical products and miscellaneous chemical products. Substituted may be lead-coated sheet steel, aluminum, plastics, waxed cardboard, glass or ceramics.

The decision also stated that since it is impossible to use substitutes for tin in making containers for certain products, the regulations prohibit the use of tin in making small-size containers in the following cases, in order to reduce the consumption of tin: cans for vegetables, fruits, tomato paste, marmalades, canned fish products, hors d'oeuvres, salt meats, meat, condensed milk and powdered milk.

Cans for tomato paste must contain not less than 200 grams. Cans for marmalades, pickled products, etc., must contain not less than 500 grams. Cans for tuna fish must contain not less than 200 grams. Cans for all other fish products and salt meats must contain not less than 100 grams. Cans for meat, other than the salted types, must contain not less than 300 grams. Cans containing less than 410 grams may not be used for sterilized milk. Cans containing less than 385 grams may not be used for sweetened condensed milk and cans containing less than 340 grams may not be used for unsweetened condensed milk.

The domestic situation

(*Continued from page 37*)

ress has been made to date. At the present moment, a dislocation of tin imports would give us an eight-month supply of tin stock and each passing week sees this supply increasing substantially. The goal of a one-year supply is, of course, based upon present consumption figures. It becomes necessary, therefore, to determine into which channels this consumption is going so that an order of priority can be established. By this we mean to say that an eight-month or a one-year supply, on the basis of present consumption by all industries, might, in an emergency, be extended into a 12-month, 18-month or two-year supply for the tin container industry by the use of substitutes in other less essential fields.

One other source of tin supply lies in the reclamation of tin via the detinning process. The detinning industry exists in this country and a number of companies are today engaged in reclaiming metals. There is obviously substantial possibility for an extension of these efforts, particularly if wartime necessity forced the Government actively into the encouragement of this procedure. Thus one further substantial contribution to the annual available tin supply would be found.

Of the total pig tin consumed in the United States, from 40 to 45 per cent goes into the production of tinplate. Of the total pie tin consumed 22 per cent goes into the production of solder. Thus between 60 and 65 per cent of all tin imports fall within these two consumption categories. Over a period of years, the percentage of tinplate used for canning has tended to rise, as shown in Table 3. The last available figure for the year 1935 showed a percentage of 62. Projecting this line would indicate a present percentage of perhaps 75. Thus it will be seen that somewhere about 50 per cent of all imported tin (75 per cent of tinplate plus an equal percentage of all solder) is utilized by the various packaging industries.

Other uses vary from the most essential to the least essential and it may therefore be a safe assumption to say that approximately one-half of the non-packaging uses could be eliminated before it would be necessary to substantially cut down upon the present packaging uses of tin.

Within the packaging field, a system of priority would no doubt be set up. Studies have been made by various Government departments along these lines and the experience of both the British and Axis powers would undoubtedly be called upon as a guide. (Much detail on this experience is shown in other sections of this survey and it will not therefore be further discussed at this point.) In considering foreign experiences, however, it is important to bear in mind the differing availability of substitute materials as between this country and countries at present engaged in the war. Thus it will be clear that British efforts for the elimination of the use of tin in packaging differs

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sharply from the German and Italian efforts because of the special paper situation with which Britain is confronted—a situation at present far more acute than that facing the German and Italian governments.

A study of paper availability in this country indicates that the American situation will be far less acute, in this respect, than that of any of the three countries previously mentioned. Therefore, wherever a substitution of paper for metal is possible, on the basis of price and production considerations, it is probable that the question of availability of paper will not enter greatly into the situation.

Before turning to non-metallic containers, however, most packagers, and particularly the canners, will explore the possibility of utilizing metallic containers with lighter coatings of tin or metallic containers with coatings other than tin. Among these possibilities are the following:

The electro-deposition of tin on strip steel as a substitute for the present coating methods, thereby cutting consumption.

The use of silver dip on steel strip (a process which has received much attention from the Bureau of Standards of the Department of Commerce and one which may prove economical for return trip containers of certain types).

The use of aluminum dip.

Coating of strip steel with enamels.

Coating with lacquers.

The use of phosphate films (Bonderizing).

In respect to such substitutions, the Germans seem to have carried research and production furthest. The reader is referred to the detailed description of German experience along these lines, particularly the description of their use of a Bonderizing process and the description of the electrochemical, corrosive-proof inner film which the Germans are reported to be using. Electrical welding to replace solder is reported to be making substantial savings of tin for German industry and would seem to indicate another possibility of saving in this country, although this would involve very substantial changes in production equipment in can-making plants. The substitution of aluminum or plastics for tin in collapsible tubes has likewise been carried to a fair extent in Germany and might be applied in this country to an equal degree after a period of readjustment.

Beyond the question of substitution, there are numerous other possibilities for saving of tin. The work along these lines has been carried furthest by the British and to a lesser degree by the Italians. Two principal fields for exploration are available. First, containers in certain categories can be constructed with a view toward re-use. This necessitates the setting up of container return systems, an expensive procedure placing a tax upon shipping facilities. On the British Isles, however, this procedure has been followed extensively and its utilization seems to be increasing substantially from month to month.

A second method involves the restriction of container production to the larger sizes. The British have explored this avenue of approach very extensively and great economies are obviously possible. It takes far less than twice as much package to enclose 2 lbs. of a product than it does to enclose 1 lb. and the ratio provides further advantages as size increases. The packager, of course, cannot look with favor upon this procedure as long as there are any other alternatives available. It will involve so extensive a disruption of marketing procedures and of consumer habits as to completely change all relationships between producers, wholesalers, retailers and consumers for many years to come. Nonetheless, the procedure has had to be followed in all the warring countries, to greater or lesser degree, and it is here mentioned as one of the later possibilities in the chain of events which may occur should this country ever find itself confronted with a pressing tin shortage.

It is important, however, to remember that this chain of events is no mere list of alternatives. Each alternative described has its place on the schedule of time. In view of the present stocks of tin in the country or en route and in view of the immediate possibilities in terms of a cutting down of non-packaging tin uses, in terms of substitutions of other materials, in terms of substitutions of other coatings and in terms of the building up of other sources and of reclamation of tin, the final alternative of size restriction is obviously a very long way off.

The conclusion would seem to be reasonably safe that American packagers need not unduly worry about the future availability of metal containers. Particularly is this true of food canners and others using canning processes. Our fortunate economic and geographical situation and our belated, but nonetheless somewhat effective Governmental efforts in establishing a tin stock pile, undoubtedly assures of a far more advantageous position in the event of war than has been enjoyed by any of the European countries.

The Government specification of tin containers for the new army rations (see page 38) would indicate the expectancy, in army quarters, of a substantial degree of availability of tin-coated plate even after the beginning of any possible hostilities.

The Paper Situation

Papers and paperboards constitute the greatest single source of supply of packaging materials and hence anything which will affect the availability of these materials will vitally affect the American packaging industries. Packagers, hearing of the rigid paper controls which have been introduced in Great Britain in particular and in all warring countries, have naturally been concerned as to the effect of a similar situation and the availability of American materials.

Let us, therefore, first consider the size of the American industry and its sources of supply. During 1939, the paperboard production, as reported by the National Paperboard Assn., was 5,900,000 tons. For the first half of 1940, production was at the rate of 6,160,000

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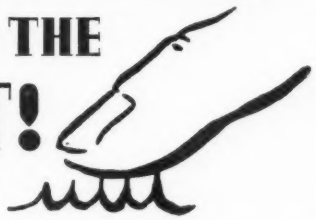

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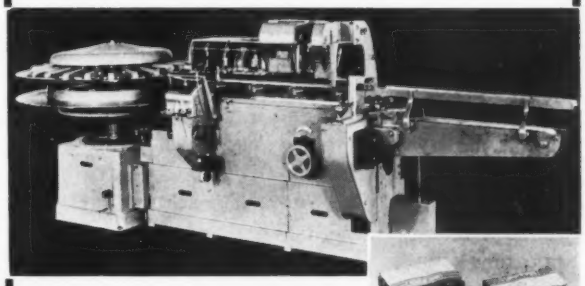

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tons per annum, an increase of 14 per cent. Of the production in the first six months of 1940, 1,570,800 tons were containerboard grades. Boxboard grades represented a production of 1,509,200 tons.

Paperboard is made from waste paper stock and pulp, the quantities of each varying according to specifications. Waste paper stock is available domestically and virtually none of this is imported. Stocks of waste paper have shown a fairly even level in recent years and up to January, 1940, we were still within the range maintained throughout 1939.

The board made in the largest tonnage is composed of sulphate pulp. It is known as kraft board. Sulphate pulp is imported to the extent of 546,000 tons in the unbleached variety and 108,000 tons in the bleached variety. Unbleached imports represented, in 1939, 17.6 per cent of consumption. Bleached represented 20 per cent of consumption. However, excess production capacity of United States mills would have been able to produce all and more of the unbleached imports, if it were necessary, and virtually all of the bleached imports.

Another type of board, known as jute board and produced in the second largest tonnage, consists of approximately 20 per cent sulphate pulp and the balance waste paper. Here, again, the figures on excess domestic capacity would indicate no great reason to anticipate difficulties because of shortage of imports.

The question resolves itself, therefore, into one of estimating the importance of imported pulp in the board industry. During 1939, of a total pulp consumption slightly under 9,000,000 tons, some 7,000,000 tons represented domestic production; 2,000,000 represented foreign production. With the stoppage of pulp supplies from Scandinavia and other European sources, some 15 per cent of our consumption was cut off. However, there is no reason to believe that domestic mills cannot be stepped up to meet a very substantial portion of this loss. Prices may increase and some substitution may have to be made, but the paperboard industry is generally a domestic industry, utilizing domestic raw materials.

Nor are any particular shortages expected in the specialty fields of fancy papers, box papers, label papers, etc. Here, again, certain specialties may become unavailable, certain others may increase substantially in price, but industry will not be confronted with anything like the all-pervading restrictions imposed by Great Britain upon its packagers.

In fact, quite the contrary tendency might be expected. Should this country enter a prolonged and extensive war, the necessity for conserving foreign exchange and for utilizing shipping facilities for essential purposes will undoubtedly lead the Government to encourage the extension of those packaging industries utilizing domestic materials in the most substantial quantities. Thus the general line of approach will be to seek to substitute paper, in one form or another, for less available materials.

Insofar as the question of externally produced raw materials is concerned, the paper industry has already taken its licking without upsetting, to any very great degree, the packaging apple cart.

Rubber

The principal usages of rubber in packaging are in closure sealing compounds for the canning and bottling trades and as the basis for the rubber derivative sheeting materials which have recently been developed. While both of these are key uses and loom as an important part of the packaging picture, they do not constitute more than one-half of 1 per cent of the total rubber consumption of this country. Hence any shortage necessitating restriction on rubber consumption might be expected to have but a slight effect, if any, on the packaging industries.

As a matter of fact, should an extensive conservation rubber program be put into effect, it would, without any possible doubt, be aimed primarily, and perhaps almost solely, at the tire industry which uses over 75 per cent of the total domestic consumption. Packaging operations involving the use of rubber or rubber derivatives would probably be ranked as prime defense industries and their small portion of the annual supply probably would not be touched.

Consumption of rubber averages 50,000 tons per month. Imports during 1940 have averaged 63,000 tons per month. Thus the stock of crude rubber held by private industry have been mounting steadily from a November, 1939, low of 118,535 tons to an August figure in excess of 171,000 tons. An additional 41,741 tons are held in Government warehouses, having been secured in return for the recent cotton exchange with Great Britain. Beyond that, private manufactured stock on hand (largely tires) stands at about two months' supply. In all, raw and manufactured stocks on hand total about five months' supply and it is anticipated that for the balance of the year, arrivals will run about 70,000 to 75,000 tons a month (barring the closing of the sea lanes).

Furthermore, the RFC-financed Rubber Reserve Corp. has contracted to purchase 150,000 of crude rubber during the rest of this year, to go into Government reserves for use in time of national emergency only. An additional 180,000 tons has been contracted for delivery in 1941.

Since annual domestic consumption has run about 6,000 tons per annum, we should have, at this rate, about eight months' normal supply in reserve by the end of the year, with the stock increasing rapidly with each successive month—again, of course, barring the closing of the sea lanes.

In addition to the facts cited above, three other factors should serve to allay worries in regard to the availability of rubber for packaging purposes. First among these is the increasing reclamation of rubber and the increasing stock of reclaimed rubber. Within the last year, production of reclaimed rubber has more

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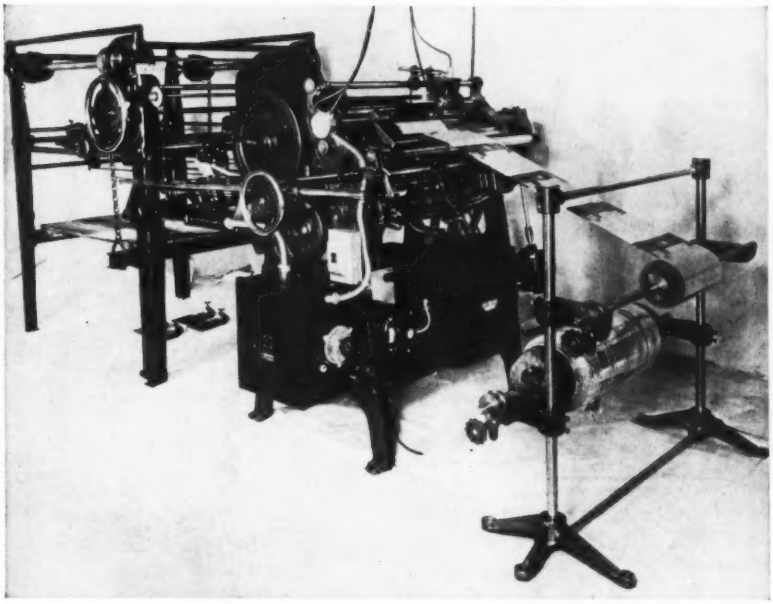

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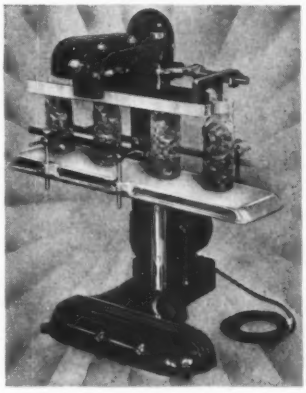

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than doubled and stocks of such rubber have likewise risen very substantially.

Secondly, production of synthetic rubber is beginning to get under way. This branch of the industry still stands a long way from being able to play a major part in producing America's rubber supply. Yet the building of new synthetic plants is now under way and others are approaching the building stage rapidly. With the present reserves of crude rubber in private and Government hands, there would seem to be ample time for these new plants to get into full working production no matter how the immediate world situation may develop.

It should be pointed out, however, that at present synthetic rubber represents but an insignificant portion of the country's total consumption. In 1939, production ran to 1,700 tons as against 592,000 tons of crude rubber (less than 0.5 per cent). Productive capacity has substantially increased in recent months. For instance, the Dow Chemical Co. has recently completed a plant with a capacity of 2,000,000 lbs. per year. Du Pont production is expected to reach approximately 15 tons per day by the end of this year. Goodrich production is expected to reach 5 tons per day.

A third possibility lies in restriction of the use of rubber. One simple form which such a restriction would take would affect tires. This would involve a forced reduction in driving speeds to, let us say, 45 miles an hour. Tire mileage, when cars are not driven in excess of this speed, increases very substantially over the mileage now achieved by drivers accustomed to higher speeds.

Thus the mere fact of enforcing a maximum speed limit (by the installation of governers on cars or by other means) would substantially reduce the monthly consumption of the major rubber consuming factor—the automotive tire. Furthermore, such a forced reduction in speeds would permit car owners to utilize tires which are at present discarded as too worn for safety. Whereas a tire with a smooth tread may prove very dangerous on a car driven at 65 or 75 miles per hour, the same tire might not involve any undue hazard if it were impossible to drive the car at high speed.

This single restriction—which might inconvenience individual car owners, but would not generally affect American economy—would have the effect of substantially extending the period which could be covered by present reserve stocks. It promises a greater rubber saving than perhaps any other method or group of methods of restriction which might be adopted. Responsible rubber company officials indicate that some variation of this plan would undoubtedly be the first step proposed to reduce rubber consumption in case of necessity.

At any rate, insofar as packaging is affected, there would seem to be virtually no reason, at this time, for anticipating any difficulty in obtaining rubber or rubber derivatives for packaging purposes.

Glass

The glass container industry is a domestic industry in practically all its aspects. Some supplies of novelty glassware, perfume bottles and vials were formerly imported from Czechoslovakia, Austria and France, but these shipments were cut off virtually in the beginning of the war and the domestic industry has been able to fill the gap without difficulty. Furthermore, these imports represented but the smallest fraction of the total glass container business.

Glass container production, over the last few years, has averaged between 39,000,000 gross and 51,000,000 gross, the last figure being that for 1939. Stocks of glass containers have shown a gradual rise in the last few years, although no decisive trend is evident. The February figure for containers held in stock totalled 9,807,000 gross, the highest figure in a number of years. This figure for containers in stock is believed to have risen somewhat in recent months.

If any difficulties are to be experienced in securing glass containers in the event of war, they will probably be similar to those experienced in Great Britain. The more intensive development of the industry in this country, however, should serve to reduce even these strains to a much lower level than has been experienced on the British Isles.

The British have adopted measures to assure the maximum productivity of automatic bottle-making equipment. Their machines today are kept running on a given design of container for the longest possible time to avoid loss of productive capacity due to shutdowns for the changing of molds. There is also an effort being made in Great Britain to encourage the production of the largest sizes of containers, since the total container capacity produced by a given machine depends, in substantial measure, upon the size of the individual container being produced. Assuming there were similar necessities in this country—although such an assumption is not warranted except under the severest wartime conditions—production might be limited to the standardized types of containers and users of private mold bottles or of unusual stock mold types might find some difficulty in obtaining production. A more likely source of difficulties would be that affecting the production of new molds for new designs and types of container, since tool and die makers are already the labor category in which shortages are being experienced. Any great further expansion of war industry might produce an acute shortage of these all-essential workers. Shortages of tool metals might also develop. While these effects have made themselves felt in Great Britain, there is little reason for immediate alarm in this country. Contrariwise, there is much reason to expect that the use of glass containers, as a substitute for some other types, might be encouraged if a war situation should make desirable either the freeing of foreign currency balances or the releasing of other types of container materials for more immediate national defense purposes.

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Cork

The bulk of cork imports come from Spain, Portugal and Algeria, all, more or less, under the control of "totalitarian" powers. Imports of cork wood have fluctuated greatly within the last few years. In 1937, imports of cork wood totalled 115,500,000 lbs. In 1938, this figure dropped to 48,300,000 lbs. In 1939, a slight rise was experienced to 63,400,000 lbs. In the first eight months of 1940, 68,700,000 lbs. were imported, indicating a further rise for the year to approximately 88,000,000 lbs.

While this would indicate a substantial depletion of reserve stocks, a number of factors would lead toward the conclusion that the situation is by no means serious and that ample supplies for packaging purposes are available in any contingency. Best indication of this sort is the fact that the Defense Commission and the Government generally have seen no need to take any emergency steps to step-up the imports of cork, such as have been taken for both tin and rubber.

Insofar as it affects the packaging industries, cork is a major closure material, but not necessarily an all-essential one. Numerous alternative closure and lining materials are actively in competition with cork. Certain of these materials would no doubt fall into the shortage category sooner than cork would. The range of alternatives, however, seems to be great enough to permit packagers to look forward, with relative equanimity, to any dislocation in any one or even in several of the closure-supplying raw material trades.

The British experience can serve as a guide (and here, as elsewhere, it is of importance to realize the differences as well as the similarities between British and American economy). Principal difficulties which might be experienced by closure users would involve not the availability of some form of closure, but, rather, the necessity for changing over machinery to permit the use of a more available form.

Aluminum

Aluminum is widely used in packaging as a closure material, for foils, for wrapping and for collapsible tubes. Despite the wide range of aluminum applications in the packaging field, however, these applications account for somewhere between but 5 and 8 per cent of the total consumption of aluminum. Domestic productive capacity in the aluminum industry has made great strides within the last few years. Production, which dropped off very substantially from the 1930 figure of 104,000 metric tons, passed this point again in 1936 and by 1939 had reached the all-time high of 148,682 metric tons.

Production of new aluminum has up to now been carried on at four points, namely, Alcoa, Tenn.; Massena, N. Y.; Badin, N. C. and Niagara Falls, N. Y. A vast new plant is being built in the Far West to take advantage of the power generated by the Bonneville Dam. All five plants mentioned above are those of the Aluminum Co. of America. The same company has under construction hydro-electric projects and smelting plants at Glenville and Nantahala, N. C. Additional fabricating facilities are likewise under way at various points throughout the country. A new domestic source will be represented when the $15,800,000 plant of Reynolds Metals Co., Inc., now being constructed in the Tennessee Valley, goes into operation. This plant is being financed with the proceeds of a loan recently authorized by the Reconstruction Finance Corp. and emphasizes the strenuous steps being taken by the Government to expand aluminum productive capacity. Thus a productive capacity that now stands at 450,000,000 lbs. will rise, by the middle of 1942, to 700,000,000 lbs.

That such expansion, on a fairly rapid scale, is possible is demonstrated by the experiences of other countries. German production—indicative, to a high degree, of productive capacity—rose from 39,000 metric tons in 1934 to 165,000 metric tons in 1938. Russian capacity jumped from a mere 855 tons in 1932 to 48,000 tons in 1938. Japan built an industry capable of producing 20,000 tons in 1938 from a low point of but 700 tons four years previously.

While the ability to produce aluminum is very substantial in this country and is being expanded at a rapid rate, the availability of the material for packaging purposes does not necessarily run parallel to total production. Principal user of aluminum today is the aircraft branch of the transportation industry. In 1939, it used twice as much aluminum as in the previous peak year of 1937. 1940 has seen a further tremendous increase in aviation demand. Other war industry fields likewise require aluminum in great quantities and a very substantial expansion demand in these fields might affect the availability of the material for packaging purposes.

In estimating the probability or improbability of such an effect, however, the important factor to be kept in mind is the importance of packaging, particularly of food and drug packaging, to national defense and the relatively small quantities of aluminum which contribute greatly to the efficiency and utility of such packages. It may safely be said that no restrictions on the use of aluminum in packaging are immediately in sight. It may further be said that if and when such restrictions are necessary, they will undoubtedly be applied first and foremost to the non-essential uses in packaging. The purely decorative uses would be the first ones proscribed and this procedure would be followed through the relative degrees of importance, leaving aluminum closures as, perhaps, the last of all aluminum applications to be touched. It should be emphasized, here more than ever, that the British and German and Italian experiences, cited in other sections of this survey, cannot be considered as an accurate guide in the case of aluminum, although they do, of course, indicate a possibility.

Plastics

The use of plastics in packaging has expanded at a phenomenal rate during the last few years. The principal use today is in closures, but very substantial usage is made of plastics for molded jars, jewelry and ring boxes, re-use containers of various types, for displays and for a host of other purposes closely related to packaging. The rigid transparent materials should here be grouped with plastics and these, of course, have come to play a tremendous part in packaging.

British experience has been cited in an earlier section of this survey. The productive capacity of certain plastics has virtually been commandeered for military purposes. Other materials, notably the phenol-formaldehydes, are readily available for commercial use. Chief bottle-neck has been in the inability to secure new molds due both to the lack of skilled artisans and the lack of tool steels.

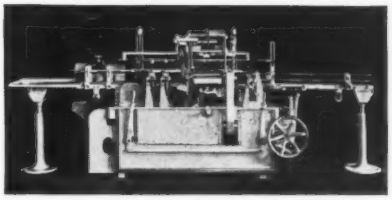
The German experience has been that plastics provide a uniquely suitable replacement for the non-available metals and plastic production and usage in Germany mounted accordingly, with the government making strenuous efforts to foster the plastics industry.

In the United States, with but a few exceptions, and those minor ones, there is an abundant supply of raw materials for manufacturing the extensively used commercially developed plastics. The chief raw materials consumed in the plastics industry can be derived from a few natural substances such as air, water, coal, petroleum crudes, salt, sulphur, cellulose and limestone —all generously available domestically.

As for molding or fabricating capacity, Modern Plastics, in its recent survey, has estimated that the plastics industry is now operating at about 55 per cent of *emergency* capacity and that toolroom equipment—i.e., mold-making departments—is at present operating at about 65 per cent of *emergency* capacity. Both molding and laminating plants are capable of handling increased production. Initially they could do so without rearranging working schedules. If required, additional shifts could readily take care of more production. In an extreme emergency, product styles would be frozen and current molds would have to be utilized as they are now being utilized in Great Britain.

In view of the high development of the plastic closure industry, this should present no very great difficulty for closure users. Closure manufacture has become a specialized branch of this industry utilizing specially designed high-speed equipment to a large degree. Hundreds upon hundreds of molds exist today and the only packagers who would be inconvenienced would be those desiring a special type of mold closure.

It is questionable whether in a severe emergency such uses of plastics would be accepted as essential to the national defense. In view of the metal savings made possible by the plastic closure, there is no doubt that special consideration would be given to closure-production plants.



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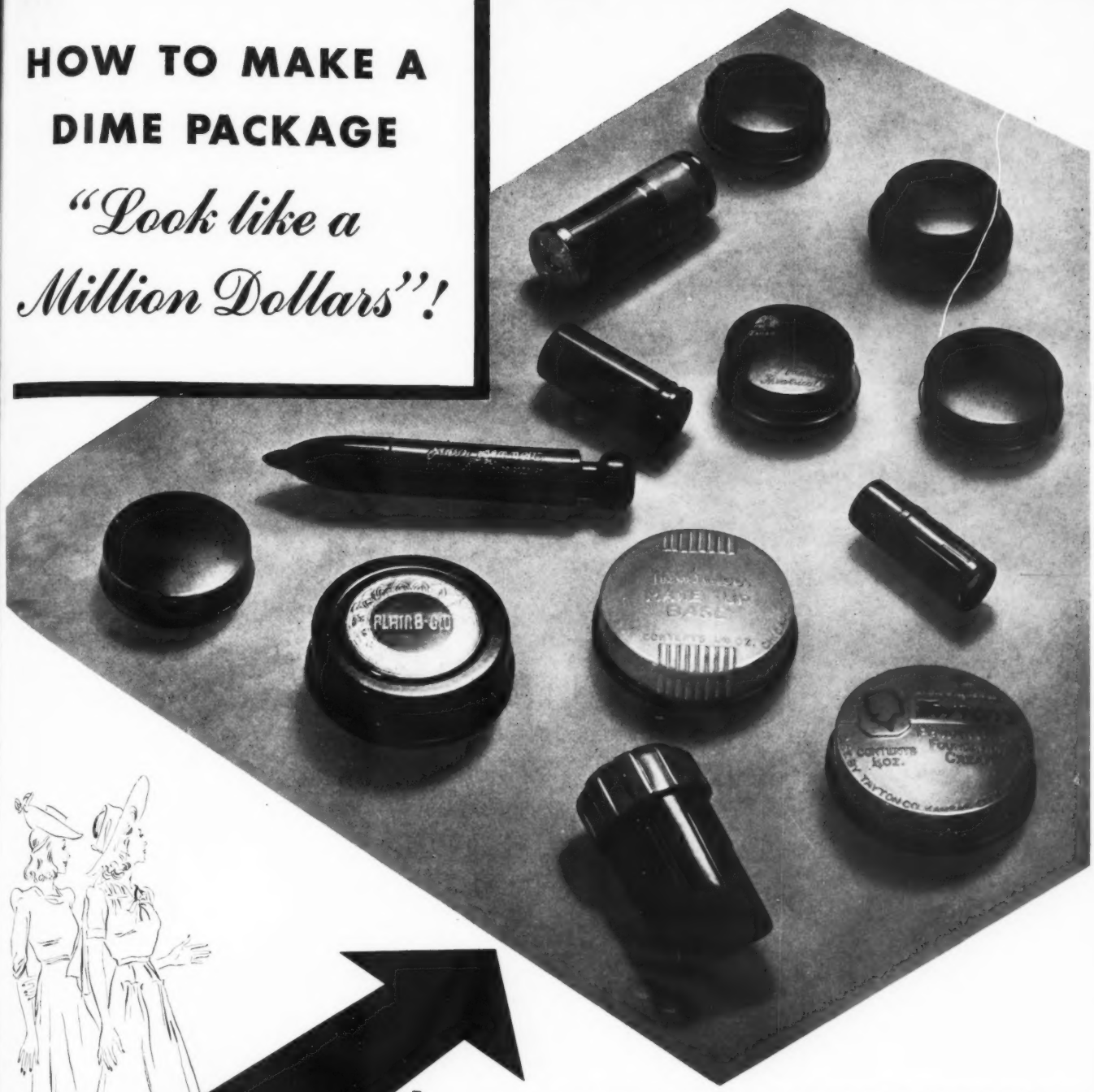

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